

TARDY, V.

On the 60th birthday of Dr. Jan Dolezal. Cesk. psychiat. 58 no.2:  
130-133 Ap '62.

(BIOGRAPHIES)

PETROV, G.N.; ROZENFEL'D, V.Ye.; KAGANOV, I.L.; PETROV, I.I.;  
STAROSKOL'SKIY, N.A.; TARE, B.M.

Vasilii Aleksandrovich Iz"iurov. Elektrichestvo no.7:93 J1  
'60. (MIRA 13:8)  
(Iz"iurov, Vasilii Aleksandrovich, 1885-)

**TARE, R.**

**In the struggle for technological progress. Sov.profsoiuzy 5 no.1:  
46-50 Ja '57. (MLRA 10:2)**

- 1. Predsedatel' komiteta profsoyuza radiosavoda imeni Popova.  
(Radio industry) (Trade unions)**

Adjustment of continental triangulation nets. In German.

p. 429 (Acta Technica) Budapest, Hungary Vol. 16, no 3/4 1957

SO: Monthly Index of East European Accessions (AEEI) Vol. 6, No. 11 November 1957



TAREEVA, A. I.

USSR/Toxicology  
Hexachlorocyclohexane

Feb 1947

"Approximate Data on Investigations of the Toxic  
Features of Technical Mixture of Hexachlorocyclohexane  
Isomers," A. I. Tareeva, 2 pp

"Farmakol i Toksikol" Vol X, No 2

Experimental data leading to the conclusion that  
doses of 200 and 500 milligrams do not cause any  
changes in the human skin.

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TARELKIN, Konstantin Danilovich; SINEL'NIKOVA, TS.B., red.; TSESARKIN,  
L.D., red.

[Fur goods] Pushno-mekhovye tovary. Moskva, Izd-vo "Ekono-  
mika," 1964. 195 p. (MIRA 17:6)

BOYKO, Yu.A., inzh.; DOBROKHOTOV, V.I., inzh.; KISEL'GOF, M.L., kand.  
tekhn.nauk; PATYCHENKO, V.S., inzh.; POGORELOV, B.F., inzh.;  
TARELKIN, M.F., inzh.

Burning of lignite with a high moisture content. Elek. sta. 36  
no.2:8-12 F '65. (MIRA 18:4)

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RODZEVICH, N.V., inzh. (Kolonna); TARELKIN, Yu.V., inzh. (Kolonna)

Coating with caprons of the axle box supports of diesel locomotives.  
Elek. i tepl. tiaga 6 no.11:18 N '62. (MIRA 16:1)  
(Diesel locomotives)

PUTILIN, V.N., inzh.; RODZEVICH, N.V., inzh.; TAPFLKIN, Yu.V., inzh.

Use of capron for the axle end thrust bearings and bushings  
of the spring suspension for locomotives. Trudy VNITI  
no.19:214-223 '64. (MIRA 18:3)

TARELOV, A.S., inzhener.

Automatic feed check valves. Blek.sta. 28 no.1:77-79 Ja '57.  
(MIRA 10:3)

(Boilers--Safety appliances)



TARENKO, M.I.

5891 TARENKO, M.I. Metodika i tekhnika opredeleniya kolichestva pyli v vozdukhe. (metod. pis'mo). tbilisi, gruzmedgiz, 1954. 24s, s ill. 16sm (nauch.- issled. in-t gigiyeny truda i profzabolevaniy im. n. i. makhviladze m-va zdravookhraneniya gruz. ssr), 2.000ekz. bespl. -a vy. ukazan v kontse teksta.-na gruz. yaz.-  
(55-499) 614.71-074

SO: Knizhnaya Letopis', vol. 1, 1955

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TARENKO, M.I.

MACHABELI, M.Ye., kand.med.nauk; TARENKO, M.I., nauchnyy sotrudnik;  
QMBASHIDZE, G.M., klinicheskiy ordinatort

Sanitary and hygienic conditions of workers employed in spraying  
citrus trees with octamethyl and mercaptophos. Gig. i san. 22 no.7:  
84-85 J1 '57. (MIRA 10:10)

1. Iz Instituta gigiyeny truda i professional'nykh zabolevaniy  
Ministerstva zdravookhraneniya Gruzinskoy SSR.

(INSECTICIDES, injurious effects,  
phosphates, in spraying citrus trees (Rus))

(PHOSPHATES, injurious effects,  
insecticides, in spraying citrus trees (Rus))

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September 26, 2002 CIA-RDP86-00513R001755010006-6  
GOGUADZE, V., doktor khim.nauk, zasluzhennyy izobretatel' Gruzinskoy SSR;  
TARENKO, M., nauchnyy sotrudnik

Lighting without burning. Izobr. i rats. no.10:12-13 '63.

(MIRA 17:2)

1. Institut prikladnoy khimii i elektrokhemii AN Gruzinskoy SSR (for Tarenko).

SHVANGIRADZE, M.D.; TSKHADADZE, K.A.; TARENKO, M.I.; GOGUADZE, V.P.

Increase of the sensitiveness of nitrogen detection by the  
Lassaigne method. Zhur. anal. khim. 18 no.11:1399-1400 N '63.  
(MIRA 17:1)

1. Institut prikladnoy khimii i elektrokhemii AN GruzSSR, Tbilisi.

19  
GOGUADZE, V.P.; TARENKO, M.I.

Color reaction for thiocyanate alkyls and the synthesis of new  
fluorescent dyes. Soob. AN Gruz. SSR 36 no.1:69-76 0 '64.  
(MIRA 18:3)

1. Institut prikladnoy khimii i elektrokhemii AN Gruzinskoy SSR.  
Submitted March 6, 1964.

L 25799-66 EWA(h)/EWT(1)  
ACC NR: AM6008542

Monograph

UR/ 28  
B+1

Tarenenko, Zoya Il'inichna (Candidate of Technical Sciences);  
Trokhimenko, Yaroslav Karpovich (Candidate of Technical Sciences)

Delay systems<sup>25</sup> (Zamedlyayushchiye sistemy) Kiev, Izd-vo "Tekhnika",  
1965. 306 p. illus., biblio. 6000 copies printed.

TOPIC TAGS: delay circuit, traveling wave, cavity resonator

PURPOSE AND COVERAGE: This book is intended for the technical personnel of industrial enterprises and design offices, and may also be used by aspirants and students in advanced courses of radio engineering and radio electronic divisions of schools of higher education. It describes the properties of delay systems in shf cathode-ray tubes, using the extensive interaction of the electron beam with the traveling-wave field. General problems pertaining to traveling-wave propagation in delay systems are described. The electrodynamic characteristics of helical, pin, comb, and lumped-parameter delay systems and of cavity resonator circuits, as well as those of some special types of delay systems, are discussed. Methods for theoretical and experimental investigation of delay systems and measurement of their basic parameters are presented.

UDC 621.385.6:621.372.81

Card 1/4



L 25799-66

ACC NR: AM6008542

TABLE OF CONTENTS:

Foreword -- 5

1. Wave propagation in delay systems -- 7
  1. Conditions for delayed wave propagation -- 9
  2. Basic theorems concerning fields in periodic structures -- 13
  3. Dispersion characteristics -- 16
  4. Field propagation in delay systems -- 23
  5. Coupling impedance. Field propagation parameter -- 27
  6. Effect of delay system characteristics on traveling-wave and backward-wave tube operation -- 32
  7. Delay system in charged-particle linear accelerators -- 36
2. Helical structure delay systems -- 39
  1. Helically conductive cylinder -- 39
  2. Tape helices -- 45
  3. Coupling impedance -- 51
  4. Multiconductor and modified helices -- 56
  5. Helix in dielectric and ferromagnetic media -- 60
  6. Attenuation -- 63
3. Rod delay systems -- 67

Card 2/4

L 25799-66

ACC NR: AM6008542

- 2
1. Theory of multiconductor lines -- 69
  2. Calculation of characteristic impedances -- 74
  3. Pin comb -- 77
  4. Ladder systems -- 79
  5. Opposing pins made of large rods -- 86
  6. Opposing pins as a multiconductor line -- 90
  7. Flat helix -- 98
  8. Practical modifications of rod systems -- 100
- 
4. Rib structure delay systems -- 109
    1. Wave propagation above a comb structure -- 110
    2. Complex comb systems -- 116
    3. Axial symmetry rib structures -- 121
    4. Opposing plates in a rectangular waveguide -- 131
  5. Lumped-parameter delay systems -- 138
    1. Dispersion equations -- 139
    2. Characteristic and coupling impedance -- 145
    3. Ladder circuit delay lines -- 152
    4. Iterated networks of coupled circuits -- 161
    5. Iterated networks of bundle six-poles circuits -- 175

Card 3/4

L 25799-66

ACC NR: AM6008542

0

6. Iterated networks of coupled resonators -- 184
  1. Properties of coupled resonator circuits -- 186
  2. Iterated networks of capacitive-coupled resonator circuits -- 195
  3. Dispersion equations of inductive-coupled resonator circuits -- 200
  4. Positive mutual-inductance resonator circuits -- 208
  5. Negative mutual-inductance resonator circuits -- 220
  6. Multistage septate waveguides -- 227
  7. On the method of equivalent circuits -- 232
7. Special types of delay systems -- 236
  1. Delay systems with contactless components -- 236
  2. Delay systems with gradually changing parameters -- 243
  3. Dielectric delay systems -- 248
  4. Delay systems of traveling-wave cathode-ray tubes -- 253
  5. Ring delay systems -- 255
8. Measurement of delay-system parameters -- 262
  1. Methods of experimental investigation of delay systems -- 262
  2. Measurement of dispersion characteristics -- 264
  3. Measurement of coupling impedance -- 275
  4. Measurement of cold loss -- 283
  5. Matching of delay systems -- 286

Bibliography -- 291

List of principal symbols -- 306

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TARENKOV, Ye.

International tourism and the services of passenger vessels.  
Mor. flot 25 no.8:40-41 Ag '65. (MIRA 18:8)

1. Kapitan teplokhoda "Feliks Dzerzhinskiy".

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EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD

SOURCE CODE: UR/0000/66/000/000/0334/0343

AUTHOR: Taresenko, V. P.

ORG: none

TITLE: Automatic optimization of several plants

SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Samoobuchayushchiyesya avtomaticheskoye sistemy (Self-instructing automatic systems). Moscow, Izd-vo Nauka, 1966, 334-343

TOPIC TAGS: optimal automatic control, queueing theory, approximate solution

ABSTRACT: The aim of this paper is to determine probability distribution of states of a system of  $n$  plants and  $m$  optimizers ( $m < n$ ), the average length of a queue in a servicing system under settled operating conditions, and the optimum number of optimizers. The case considered is one where the probability that an optimizer will find an extremum in no more than  $k$  steps is

$$p(k) = \sum_{i=0}^k (1-p)^i p = 1 - (1-p)^{k+1} \approx 1 - e^{-p(k+1)}. \quad (1)$$

is and distribution density of arriving calls  $\mu(t)$  coming from each plant for servicing

$$\mu(t) = \lambda e^{-\lambda t}, \quad (t > 0), \quad (2)$$

Card 1/2

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Card 2/2 11b

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depending on the temperature of the material being rolled. The tests showed that at rolling temperatures above 800C the specific pressure of 20, 40 and 60% (with similar initial depth and variable final depth) at 800-1200C (every 100C). The tests showed that at rolling temperatures above 800C the specific

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ASSOCIATION: LABORATORY & PRODUCTION DEVELOPMENT AND RESEARCH



*Fidel, E. Ya.*  
BORUSHKO, I.M., inzh.; BOKHOVCHUK, M.M., inzh.; FIDEL'MAN, G.S., inzh.;  
POZIN, M.Ye., doktor tekhn. nauk; TARAT, E.Ya., kand. tekhn. nauk.

Foam dust collectors used at the concentration plant of the  
"Apatite" Combines. Bezop. truda v prom. 2 no.2:9-11 F '58.

(MIRA 11:2)

1. Kombinat "Apatit" (for Borushko, Bokhovchuk, Fidel'man). 2. Leningradskiy tekhnologicheskii institut im. Lensovetu (for Pozin, Tarat).

(Dust collectors)

USSR/Medicine - Infectious Hepatitis Dec 53

"The Clinical Aspects, Prophylaxis, and Treatment of Botkin's Disease in Hot Climates," Prof. E. M. Tareyev, Active Mem Acad of Med Sci USSR, Moscow

Klin Med, Vol 31, No 12, pp 3-11

Enumerates some of the achievements attained by USSR science in research on infectious hepatitis. States that manifestations of this disease, in a hot climate, may involve special types of liver morbidity. Discusses transmission of the disease by inoculation. Advocates a wider use of anti-epidemic measures, and the use of specific

274126

prophylaxis for this disease. Names as outstanding problems, the detn of the origin of Botkin's disease and development of specific methods for its treatment.

VENIGERSKAYA, Kh. Ya.; LYUBETSKIY, Kh. Z.; TAREVA, G.A.

Working conditions in testing new phosphate insecticides. Gig. 1  
san. 24 no.5:12-17 My '59. (MIRA 12:7)

1. Iz Uzbekskogo nauchno-issledovatel'skogo sanitarnogo instituta.  
(PHOSPHATES, pois.  
insecticides, pre. in indust. (Rus))

TAREVEV, YE

Vnutrennie Bolezni (Internal Diseases)

950 p. 6.00

80: Four Continent Book List, April 1954

TAREYEV, A.V.

PAVLOV, A.N., otv. za vypusk; VOLODICHEVA, V.N.; IVANOVA, A.I.; KULAKOV, I.N.; LYAMINA, T.N.; MIT'KINA, L.I.; POZDNYAKOVA, N.P.; RODIONOVA, L.I.; ROMANOVA, N.M.; SOFIYEV, E.S.; CHICHKINA, A.A.; TRESORUKOVA, Z.G.; BOGATYREV, P.P.; BROVKINA, A.I.; IVANOVA, L.D.; IVASHKIN, G.A.; KAMNEV, N.I.; LYSANOVA, L.A.; OZHEREL'YEVA, Z.I.; PAVLOVA, T.I.; TYUFYUNOVA, N.I.; UMNITSYNA, A.P.; ZHIVILIN, N.N.; ALESHICHEV, M.P.; VINOGRADOV, V.I.; YEREMIN, F.S.; KRAVCHENKO, Ye.P.; LOVACHEVA, M.V.; NIKOL'SKAYA, V.S.; MAKHOV, G.I.; SKEGINA, A.V.; TAREYEV, A.V.; KHOLINA, A.V.; BRYANSKIY, A.M.; BURMISTROVA, V.D.; GRIGOR'YEVA, A.M.; LUTSENKO, A.I.; OREKHOVA, Z.V.; TEPLINSKAYA, N.V.; PEKTIKISTOVA, V.I.; BUTORIN, I.M.; BOCHKAREVA, L.D.; BURENINA, V.A.; VETUSHKO, A.M.; VIKHLYAYEV, A.A.; SOROKIN, B.S.; TSYBENKO, L.T.; KHLBNIKOV, V.N.; DUMNOV, D.I.; STEPANOVA, V.A.; MANYAKIN, V.I., red.; VAKHATOV, A.M.; MAKAROVA, O.K., red.izd-va; PYATAKOVA, N.D., tekhn.red.

[Soviet agriculture; a statistical manual] Sel'skoe khoziaistvo SSSR; statisticheskii sbornik. Moskva, 1960. 665 p. (MIRA 13:5)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye. 2. Upravleniye statistiki sel'skogo khozyaystva TSentral'nogo statisticheskogo upravleniya SSSR (for all except Makarova, Pyatakova). (Agriculture--Statistics)

TAREYEV, B.A.

Some applications of the absolute current method to the study of  
level variations of a shallow sea. Izv. AN SSSR Ser. geofiz. no. 7:  
813-820 J1 '56. (MIRA 9:9)

1. Akademiya nauk SSSR, Institut okeanologii.  
(Ocean currents)

September 26, 2002 CIA-RDP86-00513R001755010006-6  
TAREYEV, B. A. Cand Phys-Math Sci -- (diss) "Certain Problems of  
the Theory of Wind-Caused Fluctuations of the Level of Shallow-  
Water Sea." Mos, 1957. 78 pp 20 cm. (Marine Hydrophysical Inst,  
Academy of Sciences USSR), 110 copies (KL, 27-57, 104)

49-58-5-4/15

AUTHOR: Tareyev, B. A.

TITLE: Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time (Dreyfovyte techeniya v melkovodnom more pod deystviyem peremennogo vo vremeni vetra)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 5, pp 605-612 (USSR)

ABSTRACT: The importance of this problem arises in the following way. In wide, but shallow reservoirs, e.g. Northern Caspian or Azov Seas, a period of time of the order of the natural oscillations in the basin is required, if a horizontal pressure gradient and current gradient is to be built up. In the case of an irregular, rapidly changing wind of the type often found in practice, the surface inclination will be small and, hence, the gradient component of the resulting current will also be small compared with the drift component. This is even more the case for local winds, e.g. in the region of the Mangyshlak peninsula. Thus, in many instances, the current which arises can be considered as purely due to drift. This is useful in practical cases, e.g. navigation, where, otherwise, a calculation must be based on the average wind field, which may change. The development of drift currents in an infinitely deep homogeneous sea in the presence of Coriolis

Card 1/9



49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

forces and under the influence of a constant wind which arises suddenly was first solved by Fredgol'm (Ref.1). P.A. Kitkin generalized this solution for a sea of finite depth. A further generalization to a non-stationary wind field would lead to difficulties and, as V. B. Shtokman and V. A. Tsikunov (Ref.3) have shown, would not be of great interest. In deep seas, the current is distinguished by its relative stability and, hence, reacts less to a rapid change in wind field than the current in a shallow sea. In a shallow sea, Coriolis forces can be neglected in comparison with other forces. The author considers an infinite sea of depth  $h$  over which, from the time  $t = 0$ , a spatially homogeneous wind blows. The wind can change arbitrarily in magnitude and direction. The coordinates are taken with  $x$  and  $y$  in the sea's surface and  $z$  vertically downwards. Since the continuity condition holds, only one horizontal direction ( $x$ ) is considered. Eq.(1) gives the equation of motion and Eq.(2) the boundary conditions.

$$\frac{\partial u}{\partial t} = \frac{\partial}{\partial z} \left[ \nu(z) \frac{\partial u}{\partial z} \right] \tag{1}$$

49-58-5-4/15

Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

$$\frac{\partial u}{\partial z} = \frac{T(t)}{\rho \nu} \quad \text{at } z = 0; \quad u = 0 \quad \text{at } z = h; \quad u = (z, 0) = U_0(z) \quad (2)$$

$u$  is the velocity component along the  $x$ -axis,  $\nu(z)$  is the kinematic coefficient of turbulent viscosity which, generally speaking, depends on  $z$ ;  $\rho$  is the constant density;  $T(t)$  is the tangential stress of the wind along the axis (a given function of time which depends only on certain, very general, conditions). Consider first the simplest case with periodic boundary conditions which gives a closed solution.  $\nu$  is taken to be constant and Eqs. (1) and (2) written in the form Eqs. (3) and (4), where  $\tilde{u}(z, t)$  is a complex function, the real part of which equals  $u(z, t)$ . Substituting  $\tilde{u}(z, t) = e^{-i\omega t} Z(z)$ , a differential equation is obtained which is integrated in accordance with the boundary conditions to give:

$$\tilde{u}(z, t) = e^{-i\omega t} \frac{T_0}{\gamma \mu} \frac{\sin \gamma(h-z)}{\cos \gamma h}$$

Separating the real and imaginary parts of this expression, Eq. (6) is obtained. In the case of an arbitrarily time-varying tangential stress, an elementary solution can be

Card 3/9

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

obtained from Eq.(3). F'el'stad (Ref.4) and Khidaka (Ref.5) have shown that the result is Eq.(8), which changes into Eq.(9) for  $T = \text{const.}$  A numerical example for a periodically varying wind is given. The period of tangential stress change  $\pi = 2\pi \times 10^4 \text{ sec} \sim 17.5 \text{ hours}$ , coefficient of turbulent kinematic viscosity,  $\nu = 50 \text{ cm}^2/\text{sec}$ . Taking the unit of length to be 1 m and unit of time  $10^4 \text{ sec}$ ;  $\gamma = 50$ ,  $\omega = 1$ , and  $\alpha = \sqrt{\frac{\omega}{2\nu}} = 0.1 \text{ m}^{-1}$ . Fig.1 shows the results obtained for the velocity distribution with depth at different times. As can be seen from Fig.1, in the layer from  $z = 0.46 \text{ h}$  to the bottom a counter-current is observed periodically. Observation of suitable velocity distributions in natural conditions might lead to incorrect conclusions concerning the gradient of these counter-currents, if the non-stationary wind field is not considered. Eqs.(6) and (7) permit the calculation of the stress at the bottom. Fig.2 shows the variation with time of the tangential wind stress at the surface and the

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

tangential stress at the bottom, whilst Eq.(11) gives the result based on the figures introduced above. Fig.2 and Eq.(11) indicate that the greatest possible value of the ratio  $T_{\text{bottom}}/T_{\text{surface}} = 0.77$ . However, Francis' (Ref.6)

experiments show that this ratio does not exceed 0.03 in practice. It is obviously necessary to take into account the variation of  $\nu$  with depth. This is done by employing Eq.(12) which gives a linear variation with depth to a small distance from the bottom, characterized by the empirical parameter  $\epsilon$ . It can be considered that  $\epsilon$  is proportional to the thickness of the laminar layer - F'el'stad thinks that  $\epsilon/h \sim 10^{-2} - 10^{-3}$  (Ref.7). Choice of this parameter becomes more objective if it is assumed that the coefficient of turbulent velocity near the bottom is equal to the coefficient of normal molecular viscosity. In Eq.(12)  $\nu_0$  is the co-

efficient of turbulent viscosity at the surface. Hidaka (Ref.8) considered the case of  $\nu$  varying with depth (with  $\epsilon = 0$ ). The author now considers the case with non-vanishing viscosity at the bottom. Eq.(1) is rewritten in the form Eq.(13) and the boundary conditions, Eq.(2) are

49-58-5-4/15

Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

used with  $u_0(z) \equiv 0$ . A solution of the form Eq.(14) is looked for with the boundary and initial conditions Eq.(15) and (16). This gives Eq.(17) into which the substitution  $\bar{u} = G(t)R(z)$  is made. Changing the independent variable  $z$  a differential equation for  $R$  is obtained, with the boundary conditions (Eq.20). The integral of this can be written in the form Eq.(21), where  $J_0$ ,  $N_0$  correspond to the Bessel and Neumann functions of zero order and  $\gamma_n$  is the root of the transcendental equation (Eq.22). A general solution of Eq.(17) by series is now sought, with change to a new variable  $y$ . Employing formula (19) and the expression for the Wronshian cylindrical function of zero order, the coefficients  $C'_n$  and  $C''_n$  in Eqs.(24) and (25) are defined. The boundary conditions (Eq.20) and an integral formula for  $Z_0$  (any solution of Bessel's equation of zero order) are now used to determine  $\|R_n\|^2$ . Eq.(27) is now obtained from Eqs.(23), (17), (18), (24) and (25), and is integrated.

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

The final solution is found in the form of Eq.(29): all the calculations can be carried out with the variable  $y$ , and the change to  $z$  left until the final stage. If  $v_0$  is put equal to zero, as was done by Hidaka, the solution is made much simpler since the Neumann function disappears. The solution can also be used for a viscosity coefficient varying with time as in Eq.(30) - this gives Eq.(31). If we assume the coefficient to be constant with time this implies that turbulence is fully developed throughout all the region. However, in a shallow sea, a non-stationary wind produces a turbulent viscosity varying with time. Unfortunately, the time dependence cannot be determined owing to the absence of data. In the case of a suddenly arising wind which thereafter remains constant, it is natural to use:  $f(t) = (1 - e^{-\omega t})$  in Eq.(30), where  $\omega > 0$  is a parameter, characterizing, to a first approximation, the development of turbulence in a sea under the influence of a wind. Using this  $f(t)$ , the exponential factor  $m$  (Eq.9), characterizing the change of current velocity with time has the form:

Card 7/9

49-58-5-4/15

Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

$$\exp \left\{ - \nu \left( \frac{2n+1}{2h} \pi \right)^2 \left[ t - \frac{1}{\omega} (1 - e^{-\omega t}) \right] \right\}$$

for sufficiently large  $t$ , this approximates to:

$$\exp \left[ - \nu \left( \frac{2n+1}{2h} \pi \right)^2 \left( t - \frac{1}{\omega} \right) \right]$$

In other words, with a  $\nu$  increasing exponentially from zero to a fixed value, a certain fixed velocity will be observed at the moment  $t_1 + \frac{1}{\omega}$ , whereas with  $\nu = \text{constant}$

this value will be observed at  $t_1$ . In view of the function used, the velocity at the start will increase very rapidly with time, which seems to be confirmed by

49-58-5-4/15  
Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

observations in the North Caspian. A more detailed estimate  
cannot be made without more information on the function  $f(t)$  .  
There are 2 figures and 8 references, of which 3 are Soviet,  
3 German and 2 English.

ASSOCIATION: Akademiya nauk SSSR, Institut okeanologii (Academy of  
Sciences, USSR, Institute of Oceanography)

SUBMITTED: February 21, 1957.

1. Ocean currents--Meteorological factors



SOV/49-58-9-12/14

AUTHOR: Tareyev, B.A.

TITLE: Stationary Circulation due to Wind in a Square Basin of Small Depth (Statsionarnyy vetrovoy nagon i tsirkulyatsiya v pryamougol'nom basseyne maloy glubiny)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 9, pp 1139 - 1144 (USSR)

ABSTRACT: It is shown in Ref 1 that if horizontal viscosity and non-linear terms are ignored, the question of stationary wind circulation in a shallow sea depends on the solution of the equation:

$$\frac{\partial}{\partial x} \left( \frac{1}{h^3} \frac{\partial \phi}{\partial x} \right) + \frac{\partial}{\partial y} \left( \frac{1}{h^3} \frac{\partial \phi}{\partial y} \right) = \frac{1}{2\mu} \text{curl}_z \frac{T}{h} \quad (1)$$

where  $h(x, y)$  is the depth of the sea,  $T(x, y)$  is the tangential stress of the wind on the surface,  $\mu$  is the coefficient of vertical turbulent viscosity and  $\phi$  is defined by the Eqs.(2). Eq.(1) has the boundary condition (3) on the contour  $\Gamma$  of the sea, i.e. the component of

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

the total current normal to the shore line equals zero. Having solved Eq.(1) with this boundary condition, the inclination and velocity components can be found from Eqs.(4) and (5). Obviously, Eq.(1) has no significance for  $h \rightarrow 0$ ; in particular, the inclination of the level increases without bound. This singularity is due to the fact that near  $h \rightarrow 0$ , the perturbation of the level  $\zeta$ , cannot be considered small compared with  $h$ . In numerical integration, this can, of course, be avoided by assuming the coastline to be a vertical step. The present article considers a constant depth basin. For small depths, the Coriolis forces can be ignored and, hence, Eq.(1) reduces to:

$$\Delta\phi = \frac{h^2}{2\mu} \text{curl}_z \underline{T} \quad (6)$$

One method of solving the equation has been given by Leibenson (Ref 2), who assumed that the coefficients of vertical and horizontal turbulent exchange were of the

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

same order.  
The author assumes the  $\psi = X(x) \cdot Y(y)$  and separates the variables. For a basin of width  $l$  and length  $2L$ , the boundary conditions become

$$\psi = 0 \text{ when } x = 0, l \text{ and } y = \pm L.$$

It is assumed first that the wind blows along the  $y$ -axis and changes only along the  $x$ -axis. Then:

$$T_x = 0; \quad \text{curl}_z T = \frac{dT_y(x)}{dx}.$$

Assuming  $X$  proportional to  $\sin \lambda_n x$ , gives Eq.(9).  
 $Y_n$  is then found from Eqs.(9) and (10) and, hence, the general solution of (6), satisfying the conditions (8), has the form (12). If the length of the basin along the  $z$ -axis is very great (i.e. a canal), Eq.(12) simplifies to give (15) for the inclination of the level. Thus, the free surface has the form of a plane (an analogous result was

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

obtained by A.I. Felzenbaum (Ref 1) ). The author next considers the general case ( $L \neq \infty$ ). The centre of co-ordinates is now moved to the centre of the basin (Figure 1) so that the boundary conditions become Eq.(16). It can be seen from Eq.(7) that the solution will depend on  $\cos a_n x$  (where:

$$a_n = \frac{\pi}{2} \cdot \frac{2n+1}{L} \quad \text{for } n = 0, 1, 2, \dots$$

$\text{curl}_z \underline{T}$  is denoted by  $f(x, y)$  and an equation, analogous to (9), is obtained for  $Y_n(y)$ . Integration of this gives Eq.(18) for  $\phi$ . It is next assumed that the circulation can be expressed in the form:

$$T_x = a_1 y + b_1 ; \quad T_y = a_2 x + b_2 \quad (19)$$

so that:

Card4/7

$$\frac{\partial^2}{\partial x^2} \text{curl}_z \underline{T} = \text{const.}$$

SOV/49-58-9-12/14

# Stationary Circulation due to wind in a Square Basin of Small Depth

This gives Eq.(20) for  $\phi$ , which can be rewritten in the form (20a). It can be seen from Eqs. (6) and (16) that horizontal circulation is absent, not only for a constant wind but also when the field of the tangential wind stress is variable but is a scalar potential. The author next considers the case when  $T_x = 0$ ,

$T_y = ax + b$  (wind along the y-axis, the change in tangential stress characterised by a). This can be reduced, using Eqs.(20a) and (4), to an approximate expression  $\partial\phi/\partial x$ , the inclination in a direction transverse to the wind. This can be simplified further near  $y = \pm L$  if  $L \gg 2l$ , since :

$$\frac{\text{ch} \left[ \frac{2n+1}{2l} \pi(\pm L) \right]}{\text{ch} \left[ \left( \frac{2n+1}{2l} \right) \pi L \right]} \approx \pm 1.$$

Card5/7

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

It follows from the expressions for  $\partial \phi / \partial x$  and  $\partial \phi / \partial y$  that, for  $y = 0$ ,  $S_x = 0$  and, for  $x = 0$ ,  $S_y = 0$ . The difference is that, in the first case, both the total current and the  $x$  component  $= 0$ . Figure 1 shows diagrammatically the general character of the circulation corresponding to Eq.(20) for  $a_2 = a$ ,  $a_1 = 0$ . It can be seen that for  $a > 0$ , a cyclonic circulation is obtained and with  $a < 0$  an anticyclonic. Circulation in an actual basin is, of course, more complicated than that described owing to the neglect of horizontal turbulent viscosity in the above calculations. However, the inclusion of this factor in the equations would lead to excessive difficulty in solution.

Stationary Circulation due to Wind in a Square Basin of Small  
.Depth

SOV/49-58-9-12/14  
There are 1 figure and 2 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut okeanologii  
(Ac.Sc. USSR, Institute of Oceanology)

SUBMITTED: October 3, 1957

Card 7/7

TAREYEV, B.A.

FEDEROV, L.N.; BOGOROV, V.G.; and TAREYEV, B.A.

"The depths of the ocean and the problem of waste disposal therein."

report presented at the Scientific Conference on the Disposal of Radioactive Wastes, Monaco, November 1959.



13-00000-6  
20, 2002 CIA-RDP86-00513R001755010006-6  
TAREYEV, B. A., FEDOROV, K. M. and BOGOROV, V. G.

"The Depths of the Ocean and the Problem of Waste Disposal Therein."

report presented at the Scientific Conference on the Disposal of  
Radioactive Wastes, Monaco, 16-21 November 1959.

SOV/20-127-5-19/58

3(9)

AUTHOR:

Tareyev, B. A.

TITLE:

On Free Convection in Deep-water Cavities of the Oceans

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 1005-1008 (USSR)

ABSTRACT:

In cooperation with the problem of the sinking of radioactive waste products of the atomic industry into the oceans, the author investigates the possibility of water circulation in great depths. It follows from observations that a noticeable superadiabatic temperature increase occurs with increasing depth. This phenomenon is explained by geothermal heat supplies. Therefore, the entire depth must be divided into two layers which are separated by that surface, on which the gradient of the potential temperature passes through zero. The lower layer, in which the potential temperature increases with depth, is described as convective layer by the author. Rayleigh (Ref 2) already pointed out that at a certain value of the dimensionless parameter (Rayleigh number  $R$ ) convection currents may occur in a horizontal layer of water, which is heated from below. As in the present case the rotation of the earth must be taken into account, the system of equations is written down for the

Card 1/2

SOV/20-127-5-19/58

On Free Convection in Deep-water Cavities of the Oceans

Coriolis forces, and the boundary conditions for the surface separating the convective layer and the water masses on the opposite side, as well as the thresholds of instability are deduced. The values found show that already at very small negative superadiabatic temperature gradients ( $0.01^\circ$  to  $100^\circ$ ), the Rayleigh numbers are above the critical value, and that convection must occur in spite of the stabilizing effect of the rotation of the earth. There are 1 figure and 4 references, 1 of which is Soviet.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: April 30, 1959 by V. V. Shuleykin, Academician

SUBMITTED: April 30, 1959

Card 2/2

S/010/00/000/004/002/006/XX  
A053/A026

AUTHORS: Bogorov, V.G.; Tareyev, B.A.

TITLE: Oceanic Depths and the Problem of Dumping Radioactive Waste

PERIODICAL: Izvestiya Akademii nauk SSSR, seriya geofizicheskaya, 1960, No. 4,  
pp. 3 - 10

TEXT: The authors refer to the recommendation given by V.G. Bogorov and Ye.M. Kreps at the II International Conference on the Peaceful Utilization of Atomic Energy in Geneva in September 1958, to the effect that the dumping of radioactive waste in depths of the ocean should not be permitted. In this article the authors furnish new proof in favor of their viewpoint based on the latest observations made by Soviet and foreign oceanologists, in particular on the occasion of the Danish expedition on the SS Galatea in 1952 and the Soviet expedition on the SS Vityaz' in 1958. The article compares the 23 deepest depressions in the Pacific, the Atlantic and the Indian Ocean, in indicating maximum depths and their location. It also gives information on the prevailing temperatures at various depths ranging from 0 to 10,000 m in different areas and at different seasons. These temperatures even at maximum depths are subject to variations

Card 1/4

S/010/60/000/004/002/006/XX  
A053/A026

#### Oceanic Depths and the Problem of Dumping Radioactive Waste

which permits to conclude that nowhere the water is stagnant but constantly on the move, however slow this movement may be in certain places. The vertical movement of the water in the depths of the Philippine and the Bougainville depressions have been calculated as being  $10^{-4}$  cm<sup>2</sup>/sec or about 30 - 50 m per annum. The speed of horizontal movement of ocean water as a rule exceeds by far that of vertical movement, particularly in the upper layers. The article refers to investigations carried out in recent years pertaining to depth circulations, mentioning the findings of Doctor Swallow and of Doctor Laughton. The article cites a number of other phenomena, which all tend to prove the movement of water, resulting in a continuous agitation and mixing process, which creates favorable conditions to the development of life, even down to the greatest oceanic depths. During deep-sea trawling of the Vityaz' in 1958 in the Pacific, going down to a depth of 10,700 m, the existence of fauna was revealed even in these ultraabyssal depths, consisting of sponges, worms, mollusca, etc, though in small quantities, because at a distance of 10 km from the photosynthesizing layers only very little food is brought down. Life in the mass of water is in a state of constant migration. Even plankton covers considerable distances. The migration of ani-

S/010/60/000/004/002/006/XX  
A053/A026

### Oceanic Depths and the Problem of Dumping Radioactive Waste

mals and biocirculation are a powerful means of transportation of all kinds of substance including absorbed radioactivity. Harley found that in a district west of the Bikini Atoll radioactivity of plankton was 470 times greater than elsewhere in the ocean. Japanese authors state that as a result of radioactive fallout infected fishes were found near the Marshall Islands, later on near the Caroline Islands and further north near Taiwan and the Bonin Isles. Fishes caught within a radius of 3,000 km of the district of Bikini had to be destroyed on account of their radioactivity. This district being the spawning place of tuna and swordfish, it is likely that its contamination by radioactive fall-out will be of far-reaching consequences in the way of infected tunafish, in which connection the authors refer to the findings of the Japanese scientists Y. Miyake and Y. Sugaira. Interesting in this respect is also the theory developed by R.H. Ketchum and T.V. Bowen concerning the physical and biological transfer of different substances, concluding that biological transfer often exceeds the role of the physical mixing process. In respect to biocirculation a great deal of research work remains yet to be done, especially in deep-water circulation, although it is known that big plankton migrates in deep layers (down to 6 km). Thus radioactive waste buried in the depth of the ocean, when dissolved will rise

Card 3/4

S/010/60/000/004/002/006/XX  
A053/A026

#### Oceanic Depths and the Problems of Dumping Radioactive Waste

by means of physical as well as biological circulation and eventually endanger the life of human beings. The theory that the radioactive substances after a while will be dispersed and in a dissolved state mix with the entire mass of water is ill founded. Water currents are localized and the same refers to biocirculation following a certain cycle. The authors agree with H.T. Dunster that the disposal of radioactive wastes in coastal waters is highly dangerous, and so is the dumping of such wastes in the depths of the ocean. Further investigation and research work should clarify in particular: "The behaviour of radioactive substances in the ocean." - "The accumulation of radioactive substances in marine organisms and their tissues." - "The age of different layers of water and the duration of a certain mass of water remaining in a given layer, types and speeds of mixing processes." - "Speeds of vertical and horizontal circulations of different layers." - "Biocirculation, daily, seasonal, multiannual!" - "Geo-chemical factors influencing distribution of radioactive substances". There are 16 references: 9 Soviet, 6 English and 1 Japanese.

ASSOCIATION: Institut okeanologii AN SSSR (Institute of Oceanology, Academy of Sciences, USSR)

Card 4/4

TAREYEV, B.A.

Theory of convection circulation in oceanic trenches. Izv.  
AN SSSR.Ser.geofiz. no.7:1022-1029 J1 '60.  
(MIRA 13:7)

1. Akademiya nauk SSSR, Institut okeanologii.  
(Ocean currents) (Ocean bottom)



IVANOV, Yu.A.; TAREYEV, B.A.

Calculating the vertical velocity component of drift currents. Trudy  
MGI 22:3-4.'60. (MIRA 14:3)

(Ocean currents)

TAREYEV, B. A., and FOMICHEV, A. V.,

"Geostrophic currents in the Antarctic sector of the Pacific."

To be submitted for the 10th Pacific Science Congress, Honolulu, 21 Aug. - 6 Sep 1961.

Institute of Oceanology.

NAUMOV, A.G.; ZERNOVA, V.V.; IVANOV, Yu.A.; TAREYEV, B.A.

Frontal zones and biogeographic division of the surface waters  
( 0 - 500m.) of the southern part of the Pacific Ocean based on plankton.  
Trudy Inst.ocean. 58:54-66 '62. (MIRA 15:12)  
(Pacific Ocean--Plankton)

TAREYEV, B.A.

Estimation of the nature of heat convection and turbulent heat  
conduction as applied to the Antarctic circumpolar waters.  
Okeanologiya 2 no.1:31-43 '62. (MIRA 15:2)

1. Institut okeanologii AN SSSR.  
(Antarctic regions--Ocean temperature)

TAREYEV, B.A.

Internal waves in an ocean inhomogeneous with respect to density.  
Dokl. AN SSSR 149 no.4:827-830, Ap '63. (MIRA 16:3)

1. Institut okeanologii AN SSSR. Predstavleno akademikom V. V. Shuleykinym.

(Seawater—Density) (Waves)

TAREYEV, B.A.

9

Internal baroclinic waves in flowing around the irregularities  
of the bottom and their effect on processes of sediment forma-  
tion. Okeanologia 4 no.5:915 '64 (MIRA 1821)

X

TAREYEV, B.A.

Possibility of the formation of natural vertical convection in  
some regions of the Indian Ocean. Trudy Inst. okean. 64:50-52  
1964. (MIRA 177)

TAREYEV, B.A.

Internal baroclinic waves observable during the flow around  
the unevennesses of the floor and their influence on the  
deposit-forming processes in the ocean. Okeanologiya 5 no.1:  
45-51 '65. (MIRA 18:4)

1. Institut okeanologii AN SSSR.



TAREYEV, B.A.

Quasi-geostrophic instability of ocean currents. Dokl. AN SSSR 162  
no.1:74-77 My '65. (MIRA 18:5)

1. Institut okeanologii AN SSSR. Submitted September 17, 1964.

ACC NR: AR7004103 (N) SOURCE CODE: UR/0169/66/000/012/V021/V021

AUTHOR: Tareyev, B. A.

TITLE: Some consequences of the dynamic instability of ocean currents

SOURCE: Ref. zh. Geofizika, Abs. 12V127

REF SOURCE: Sb. 2-y Mezhdunar. okeanogr. kongress, 1966. Tezisy dokl. M., Nauka, 1966, 368

TOPIC TAGS: ocean current, approximation method, perturbation, ocean current instability

ABSTRACT: The problem of the stability of geostrophic baroclinic zonal ocean currents is studied with methods of approximation. The solution takes into account the vertical shift of main current velocity, vertical motions, stratification,  $\beta$ -effect, inertial forces, and the horizontal eddy viscosity. Internal waves were filtered by introduction of a quasi-geostrophic approximation of the perturbation field. It is shown that for the real values of oceanographic parameters, the intense circulation systems such as the Gulf Stream, Kuroshio, and trade wind currents are dynamically

Card 1/2

UDC: 551.465.55

ACC NR: AR7004103

unstable, and, consequently, cannot be steady. Periods of unstable, large-scale quasi-geostrophic perturbances occurring on the background of the main current have a duration of several days to several weeks. These periods are determined by the natural dynamic structure of the current and do not depend on the action of external factors (changes in tangential stress of the wind, influx of heat from the atmosphere etc). The wavelength of the more unstable large-scale oceanic perturbations is of the order of several hundred kilometers. The natural scale of horizontal turbulences must be accordingly of the same order. In connection with the phenomena of instability, the possibility of forecasting time variations of ocean currents is naturally reduced. However, some statistical characteristics of spectral function type can be calculated on the basis of the mean values of characteristic quantities (shift of velocity, stratification etc). The absence of long series prevents a comparison of calculations with observations. However, coordinated surveys in the Gulf Stream region show that the calculations yield a correct order of values. Some evaluations show that unsteady increasing (and fading) perturbations play a substantial role in the energy balance of the mean oceanic circulation. [Translation of abstract] [DW]

SUB CODE: 08,12/

Card 2/2

1st and 2nd GOLFERS

100 440 470 480 490

## PROCESSES AND PROCEDURES UNIT

**The Oxidation of Light Metals.** B. M. Tarver (*Legkie Metally (Light Metals)*, 1962, (12), 42-48).—[In Russian.] A description of methods of oxidizing aluminum, as employed in the U.S.S.R. and abroad, for increasing its anticorrosion properties and especially for insulation purposes.—D. N. S.

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## PROCESSES AND PROPERTIES INDEX

**The Use of Light Metals in the Electrical Industry.** B. M. Tarrey (*Legie Metallo* (*Light Metals*), 1902, (1), 17-22).—[In Russian.] An examination of the feasibility of using light metals and alloys as electrical conductors.  
D. N. S.

A 9 2-36 A METALLURGICAL LITERATURE CLASSIFICATION

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927-28-2 1049 JAN 8 1964

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APPROVED FOR RELEASE Tuesday, September 20, 2000  
APPROVED FOR RELEASE Thursday, September 26, 2002

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1ST AND 2ND CROSS

100 AND 4TH CROSS

PROCESSES AND PROPERTIES INDEX

11

21

**Pistons of Light Alloys.** H. M. Tarcev (*Legkie Metalli (Light Metals)*, 1932, (5), 29-30). [In Russian.] Advantages and drawbacks of pistons for internal combustion engines made from light alloys are enumerated and a list of such alloys is given. - D. N. N.

ASH S.A. OPTALLROKAL LITERATURE CLASSIFICATION

EXAMINATION

EXAMINATION

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1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

11-439-107 990401

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## PROCESS AND PROPERTIES INDEX

21

11. M. Tarvy and A. G. Shurt (Izvestiia Elektropromyshlennosti (Messenger  
Elect. Ind.), 1966, (7), 15-18). N. A.

ASME-3LA METALLURGICAL LITERATURE CLASSIFICATION

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1ST AND 2ND COLUMNS  
PROCESSES AND PROPERTIES INDEX

COMMON ELEMENTS  
COPPER  
INTERNAL INDEX

100-118000-000000-00

Electrokinetic phenomena in dielectrics. III. Conductivity of colloidal systems of various concentrations, colloidal particle sizes and temperatures. B. M. JAFFE, and V. A. BACV. *Colloid J. (U. S. S. R.)* 2, 771-5 (1937); cf. *C. A.* 32, 6120'.—Math. Equations are given showing electrocond. of colloidal systems as a function of concn. and particle size of the dispersed phase and of temp. Electrocond. increases with increase of concn. and particle size. With rise of temp. electrocond. at first increases, then passes through a maximum and finally decreases. The electrocond. of a colloidal system may be greater than that for each phase separately.  
S. L. Markov

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
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CA

13

Castor oil as a dielectric. B. M. Farcey and G. I. Raichinskaya. *Vestnik elektrom.* 1937, No. 10 11, 37-41. The chem., elec. and phys. properties of castor oil are reviewed. The dielec. resistance of castor oil is of the same order as transformer oil or Sovol. The resistance is lowered by addn. of water but is not affected by addns. of transformer oil and Sovol in amts. up to 50%. The sp. vol. resistance of castor oil and mixts. thereof with 1-5% of transformer oil or Sovol is of the order of  $5 \times 10^9 - 8 \times 10^{10}$  ohm-cm. Mixts. of castor oil with 1-5% water are conducting. B. Z. Kamich

ASB-5L6 METALLURGICAL LITERATURE CLASSIFICATION

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01111 00 000 111

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

PROCESSING AND PROPERTIES INDEX

CP

2

Thermal conductivity of colloidal systems. B. M. Tatarskiy. *Colloid J. (U. S. S. R.)* 6, 846-50(1940).--The approx. value of the heat cond. ( $\kappa$ ) of a system of spheres in a homogeneous medium can be calcd. by the formula:  $\kappa = (2 + \kappa + 2e(\kappa - 1))/(2 + \kappa - e(\kappa - 1))$  where  $e$  is the vol. concn. of sphere material and  $\kappa$  is its thermal cond. A. A. Podgorny

ASB-ELA METALLURGICAL LITERATURE CLASSIFICATION

EDOHU HONIAV

EDOHU SYNGEIVN

EDOHU HIAV OHV GSE

EDOHU HIAV OHV GSE

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TAREEV, B.M.

The production of glass electric resistors, Moskva, Gos. energ. izd-vo, 1944.  
26 p. (50-44428)

TK2851.T38

APPROVED FOR RELEASE: Thursday, September 26, 2002  
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CIA-RDP86-00513R001755010006-6  
CIA-RDP86-00513R001755010006-6"

TARDEV, B. M.

Electrical engineering materials, Moskva, Gos. energ. izd-vo, 1946. 231 p. (50-19007)

TK453.T3



TAREYEV, B. M.

TAREYEV, B. M.

Tareyev, B. M. defended his Doctor's dissertation in the Moscow Power Engineering Institute im Molotov, USSR, on 13 April 1943, for the academic degree of Doctor of Technical Sciences.

Dissertation: "Heat-Stable Electrical Insulation". Resume: Tareyev treated factors affecting the heat stability of electrical insulation, the determination of heat stability of materials, and its dependence on chemical composition, as well as problems related to the thermal conductivity of insulation. He also cited the results of a number of his scientific research works and new production developments dealing with concrete forms of insulating materials with relatively high heat stability: liquid and solid organic materials, aluminum oxide insulation, asbestos materials, glass-fiber materials, vitreous enamels, mica, and its substitutes.

Official Opponents: Profs. N. V. Aleksandrov, N. P. Bogoroditskiy (Doctors of Technical Sciences); G. I. Skanavi, B. M. Gokhberg, (Doctors of Physicomathematical Sciences).

SO: Elektrichestvo, No. 7, Moscow, August 1953, pp 37-92 (W/29344, 16 Apr 54)

TAREYEV, B. M.

USSR/Electricity  
Insulating Materials  
Insulators

Jan 48

"Work of the All-Union Bureau of Electric Insulation in 1946-1947," B. M. Tareyev, Cand Tech Sci, Sci Secy, All-Union Bu of Elec Insulation, 1 p

"Elektrichestvo" No 1

Briefly touches on major achievements of subject bureau for 1946-1947.

4/49T31

TAREYEV, B. M.

USSR/Electricity

Jan 48

"The Oldest Czechoslovakian Electrical Journal,  
'Elektrotechnicky Obzor' (Electrical Engineering  
Outline)," B. M. Tareyev, Cand Tech Sci, S. P.  
Inozentsev, Engr, 1 p

"Elektrichestvo" No 1

Compliments subject journal for the high-level  
technical information which it has consistently con-  
tained.

4/49 T29

TAREYEV, B. M.

"Lectures on the 'Electrical Materials' Course" (Lektsii po kursu "Elektromaterialovedeniye") No 3, Electrical Insulating Glasses, Editing and Publishing Division of VZEI (All-Union Correspondence Power Engineering Institute), 1949, 24 pp.

TAREEV, B. M.

personala, Electrical engineering materials, Izd. 3., perer. Moskva, Gos. energ. izd-vo, 1949,  
232 p. (50-22181)

TK453.T3 1949

TAREYEV, B. M.

PA 35/49T27

USSR/Electricity  
Insulation, Electrical  
Bibliography

Jan 49

"All-Union Scientific-Technical Congress on Elec-  
trical Insulation," B. M. Tareyev, Dr Tech Sci, Secy,  
All-Union Bu of Elec Insulation, 2 pp

"Elektrichestvo" No 1

Session was held 4-8 Oct 48 in Leningrad with 389  
engineers and teachers participating. Fifty-four  
reports on electrical insulation problems were  
submitted.

35/49T27

TAREYEV, B. M.

USSR/ Electricity Electric Power Publications

Apr 49

"New Books on Power Engineering" 1 p

"Elek Stants" No 4

Brief reviews include: N. K. Bodashkev's "Breakdowns in Stream Turbines and Their Prevention," G. K. Zherbe's "Testing Asynchronous Motors After Repairs," T. A. Zikheyev and A. I. Karelin's "Analysis of Power Fuels," "Installation and Operation of High-Pressure Boilers," edited by S. Ts. Fayerman and S. M. Shukher, "Handbook on Electrical Insulation," edited by Yu. V. Koritskiy and B. M. Tareyev, and F. A. Stupel's "Automatic and Protective Relays,"

PA 55/49T27

TAREYEV, B. M.

USSR/Engineering

May 49

Drying  
Currents, High-Frequency

"Review of I. P. Berdinskikh's Book, 'Kiln Drying and Bonding of Ligneous Materials in a Field of High-Frequency Currents,'" B. M. Tareyev, Dr Tech Sci, Netushil, Cand Tech Sci, Docent N. A. Arkhangel'skiy, Eng'r, E. P. Parin, Eng'r, 1 p

"Elektrichestvo" No 5

Does not inclose material in this book, which consists of three main parts: Generators (electron tubes, gaseous rectifiers, etc.), drying, and bonding. Points out numerous deficiencies in

55/49T50

USSR/Engineering (Contd)

May 49

author's analysis of his subject and lists examples of glaring errors in text. Published by Gos-tekhnizdat Ukraine, 1948, 120 pp, price 5 rubles.

55/49T50



157T22

USSR/Electricity - Insulation, Electric  
Dielectrics Jan 50

"Heat-Resisting Porous Insulation," Prof B. M. Tare-  
yev, Dr Tech Sci, Ya. M. Parnas, Cand Tech Sci, All-  
Union Corr Power Eng Inst, 5 pp

"Elektrichestvo" No 1

Notes advantages of nonimpregnated inorganic fiber  
insulation in gaseous medium with high working tem-  
perature and sharp temperature impulses. Deduces  
formulas for breakdown voltage, dielectric constant,  
and dielectric loss angle of glass fabric as temper-  
ature varies. Gives results of experimental verifi-  
cation of proposed formulas, confirming feasibility

157T22

USSR/Electricity - Insulation, Electric Jan 50  
(Contd)

of using nonimpregnated inorganic fibrous ma-  
terials as heat-resistant electrical insula-  
tion. Submitted 8 Jun 49.

TAREYEV, B. M., PROF

157T22

TAREYEV, B.M.

PHASE X

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 757 - X

Call No.: AF630350

BOOK

Author: TAREYEV, B. M.

Full Title: ELECTRICAL ENGINEERING MATERIALS (Fourth Issue,  
Reviewed)

Transliterated Title: Elektrotekhnicheskiye materialy

PUBLISHING DATA

Originating Agency: None

Publishing House: State Power Engineering Publishing House

Date: 1952

No. pp.: 288

No. of copies: 25,000

Editorial Staff: None

PURPOSE AND EVALUATION: This book is intended for workers in power system plants and repair shops, and contains the description of properties, grades, testing methods and treatment of materials most frequently used in electrical engineering. The book's value lies in its detailed description of many chemical compounds, which by giving their basic data and characteristics as established by the "GOST" standards, permits an insight into methods used in Soviet power engineering.

TEXT DATA

Coverage: The book is divided into 12 chapters, which give

## Elektrotekhnicheskiye materialy

information on dielectric materials in the first 8 chapters and on conductors in the last four. For a more detailed account see "Table of Contents".

## Annotated Table of Contents

## Introduction

Pages

5-10

11-21

## Ch. 1 General Information on Insulating Materials

Electric resistivity, dielectric constant, losses and strength.

21-28

## Ch. 2 Gaseous Insulating Materials

Air and various gases: The work of Professor B. M. Gokhberg on "elegas" (gaseous SF<sub>6</sub>) is reported.

28-66

## Ch. 3 Liquid Insulating Materials

Transformer oil: properties, data, testing, "GOST" standard requirements, diagrams of testing equipment (AMI-60 type), nitrogen treatment, description of various regeneration devices with diagrams.

Various liquid insulating materials: cable oil with increased viscosity. Condenser oil: basic data according to "GOST" standards, "sovol" (diphenyl C<sub>10</sub>H<sub>12</sub>) and "sovtol" compounds developed by Professor Andrianov according to technical specifications of the NKKhP.

AID 757 - X

## Elektrotekhnicheskiye materialy

Pages  
66-116

### Ch. 4 Congealing Insulating Materials

Resins: thermoplastic and thermo setting; colophony (also used in oil varnish), "GOST" standard specifications; shellac (only imported); amber; phenolic resins: bakelite, iditol and "sovenit" (basic data attached) developed in the USSR, used in the radio industry; glyptal, nitrocellulose, acetyl-cellulose, ethyl cellulose; vinyl group: polychlorvinyl, perchlorvinyl; polystyrene, congealed and emulsion (developed by A. F. Ioffe according to All-Union Technical Specifications of the MKhP and used in radio engineering, basic data given); polyethylene (basic data); polyisobutylene (basic data); polymethylmetacrylate (used for "organic glass"); polyvinylformal; polytetrafluorethylene (basic data); polyamide resins (including a Soviet make: "Capron"); polysiloxen resin group, (developed by K. A. Andrianov and O. I. Gribanova).  
Bitumen: artificial (oil) and mineral (asphalt), "GOST" standard data given.

Drying oil: Linseed oil, tung oil, castor oil (basic data)

AID 757 - X

## Elektrotekhnicheskiye materialy

Pages

Wax: paraffin; ceresin ("GOST" standards); polychloronaphtalene (basic data); oleowax (developed by N. A. Petrov and S. A. Deryabin from castor oil).  
Solvents: (a table listing formulae, standards and properties, pp. 88-89).

Varnish: impregnating varnish (types and specifications); enamel and adhesive varnish; oil varnish (types and specifications); cellulose varnish (types and data); aniline-formaldehyde and semi-conducting varnish.

Impregnating and filling compounds: quartz and other compounds for bushings and cables (tables, diagrams, "GOST" standards).

Drying and impregnating insulating materials: diagrams of drying equipment. Research on effects of moisture by Academician P. A. Rebinder, S.M. Lipatov; research on electric properties of various types of hygroscopic dielectrics by M. M. Mikhaylov; the book Teoriya sushki (Theory of Drying) by A. V. Lykov (1950) is mentioned.

Elektrotekhnicheskiye materialy

AID 757 - X  
Pages  
116-136

Ch. 5 Fiber Base Insulating Materials

Wood: properties and treatment, compounds with "uralite" (85% NaF and 15% dinitrophenol).

Paper and cardboard: data and "GOST" standards for paper insulations of cables and capacitors, developed by P. I. Gostev, T. P. Lazarenko, P. P. Bondarenko, M. A. Antonov, B. I. Ushakov and K. I. Dobrynin in 1951; Mica tape ("japanese paper") developed by I. V. Bondarenko and M. D. Dmitriyev; glue paper ("GOST" standards); cardboard ("GOST" standards).

Insulating fabrics "GOST" standards for rayon, cotton and hemp; tapes, rubberized and tarred. Non-varnish and varnish-treated insulating; basic data; "GOST" standards.

Inorganic fibrous materials: asbestos, composition, "GOST" standards, fiberglass, as developed by M. G. Chernyak, M. S. Aslanova, S. I. Ioffe "GOST" standards; table with basic data and properties on p. 135.

116-168

Ch. 6 Plastic Materials

General information, composition and photo of 150 ton hydraulic molding press. Methods of injecting, blowing,

Elektrotekhnicheskiye materialy

and pressing with diagrams of equipment used.

Binders: bakelite type, "GOST" standards, types and basic data.

Organic glass: plexiglass, basic data, used for high frequency expulsion tube, diagram of RTO type.

Laminated plastic materials: "Getinax", new paper-base material developed by N. I. Krestov, V. S. Kvashnin, V. V. Kudryavtsev, V. B. Rekst, and O. A. Butuzova, basic data, types and "GOST" standards; cotton-base "textolite" types, data and "GOST" standards; "glass textolite", glass-base, data; plywood.

Plastic flexible films: vinyl and polysterene (styroflex), basic data.

Rubber materials: natural and synthetic rubber developed by I. L. Kondakov, S. V. Lebedev, N. D. Zelinskiy and B. V. Byzov, types, basic data, and "GOST" standards.

Thiuram vulcanized rubber; ebonite, "GOST" standards, table; asbocement, basic data; micalex, basic data.

Ch. 7 Mineral Insulating Materials

Mica: Muscovite and phlogopite, properties, by M. M. Mikhaylov, E. K. Lashev, K. A. Vodop'yanov, M.I. Mantrov).

168-179

Elektrotekhnicheskiye materialy

AID 757 - X

Pages

Micanites, shape, components and basic data, "GOST" standards.

Various mineral insulating materials: marble, "GOST" standards; slate, basic data; talcchlorite, basic data.

Ch. 8 Glass and Ceramics

Glass: components, properties, types, manufacturing, use, basic data, table on p. 188.

Porcelain: manufacturing, basic data, types, testing, "GOST" standards for pin type and suspension type insulators (diagrams presented); oil circuit-breakers: VM-35-N type; 110 kv transformer TFN type (diagrams presented)

Various ceramics: Radio- and ultra-porcelain developed by N. P. Bogoroditskiy and I. D. Fridberg, basic data listed. Aluminoxide basic data; steatite, ceramics based on  $TiO_2$  "Rutil" (ticond T80, T60 and T150); segnetoceramics (tibar), developed by B. M. Vul; vilyte developed by V. I. Pruzhinina-Granovskaya and L. I. Ivanov used for grounding.

179-214



TARDY, V.

On the 60th birthday of Dr. Jan Dolezal. Cesk. psychiat. 58 no.2:  
130-133 Ap '62.

(BIOGRAPHIES)

PETROV, G.N.; ROZENFEL'D, V.Ye.; KAGANOV, I.L.; PETROV, I.I.;  
STAROSKOL'SKIY, N.A.; TARE, B.M.

Vasilii Aleksandrovich Iz"iurov. Elektrichestvo no.7:93 J1  
'60. (MIRA 13:8)

(Iz"iurov, Vasilii Aleksandrovich, 1885-)

**TARE, R.**

**In the struggle for technological progress. Sov.profsoiuzy 5 no.1:**  
**46-50 Ja '57. (MLRA 10:2)**

- 1. Predsedatel' komiteta profsoyuzov radiozavoda imeni Popova.**  
**(Radio industry) (Trade unions)**

Adjustment of continental triangulation nets. In German.

p. 429 (Acta Technica) Budapest, Hungary Vol. 16, no 3/4 1957

SO: Monthly Index of East European Accessions (AEEI) Vol. 6, No. 11 November 1957

TAREEVA, A. I.

USSR/Toxicology  
Hexachlorocyclohexane

Feb 1947

"Approximate Data on Investigations of the Toxic  
Features of Technical Mixture of Hexachlorocyclohexane  
Isomers," A. I. Tareeva, 2 pp

"Farmakol i Toksikol" Vol X, No 2

Experimental data leading to the conclusion that  
doses of 200 and 500 milligrams do not cause any  
changes in the human skin.

4753

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6  
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TARELKIN, Konstantin Danilovich; SINEL'NIKOVA, TS.B., red.; TSESARKIN,  
L.D., red.

[Fur goods] Pushno-mekhovye tovary. Moskva, Izd-vo "Ekono-  
mika," 1964. 195 p. (MIRA 17:6)



BOYKO, Yu.A., inzh.; DOBROKHOTOV, V.I., inzh.; KISEL'GOF, M.L., kand.  
tekhn.nauk; PATYCHENKO, V.S., inzh.; POGORELOV, B.F., inzh.;  
TARELKIN, M.F., inzh.

Burning of lignite with a high moisture content. Elek. sta. 36  
no.2:8-12 F '65. (MIRA 18:4)

APPROVED FOR RELEASE Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6  
TAREL: Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6

RODZEVICH, N.V., inzh. (Kolomna); TARELKIN, Yu.V., inzh. (Kolomna)

Coating with caprons of the axle box supports of diesel locomotives.  
Elek. i tepl. tiaga 6 no.11:18 N '62. (MIRA 16:1)  
(Diesel locomotives)

PUTILIN, V.N., inzh.; RODZEVICH, N.V., inzh.; TAPFLKIN, Yu.V., inzh.

Use of capron for the axle end thrust bearings and bushings  
of the spring suspension for locomotives. Trudy VNITI  
no.19:214-223 '64. (MIRA 18:3)

TARELOV, A.S., inzhener.

Automatic feed check valves. Blek.sta. 28 no.1:77-79 Ja '57.  
(MIRA 10:3)

(Boilers--Safety appliances)

TARENKO, M.I.

5891 TARENKO, M.I. Metodika i tekhnika opredeleniya kolichestva pyli v vozdukhe. (metod. pis'mo). tbilisi, gruzmedgiz, 1954. 24s, s ill. 16sm (nauch.- issled. in-t gigiyeny truda i profzabolevaniy im. n. i. makhviladze m-va zdravookhraneniya gruz. ssr), 2.000ekz. bespl. -a vy. ukazan v kontse teksta.-na gruz. yaz.-  
(55-499) 614.71-074

SO: Knizhnaya Letopis', vol. 1, 1955

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6  
CIA-RDP86-00513R001755010006-6"

APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6  
APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6"

TARENKO, M.I.

MACHABELI, M.Ye., kand.med.nauk; TARENKO, M.I., nauchnyy sotrudnik;  
QMBASHIDZE, G.M., klinicheskiy ordinatort

Sanitary and hygienic conditions of workers employed in spraying  
citrus trees with octamethyl and mercaptophos. Gig. i san. 22 no.7:  
84-85 J1 '57. (MIRA 10:10)

1. Iz Instituta gigiyeny truda i professional'nykh zabolevaniy  
Ministerstva zdravookhraneniya Gruzinskoy SSR.

(INSECTICIDES, injurious effects,  
phosphates, in spraying citrus trees (Rus))

(PHOSPHATES, injurious effects,  
insecticides, in spraying citrus trees (Rus))



00513R001755010006-6  
September 26, 2002 CIA-RDP86-00513R001755010006-6  
GOGUADZE, V., doktor khim.nauk, zasluzhennyy izobretatel' Gruzinskoy SSR;  
TARENKO, M., nauchnyy sotrudnik

Lighting without burning. Izobr. i rats. no.10:12-13 '63.

(MIRA 17:2)

1. Institut prikladnoy khimii i elektrokhemii AN Gruzinskoy SSR (for Tarenko).

SHVANGIRADZE, M.D.; TSKHADADZE, K.A.; TARENKO, M.I.; GOGUADZE, V.P.

Increase of the sensitiveness of nitrogen detection by the  
Lassaigne method. Zhur. anal. khim. 18 no.11:1399-1400 N '63.  
(MIRA 17:1)

1. Institut prikladnoy khimii i elektrokhemii AN GruzSSR, Tbilisi.

September 26, 2002 CIA-RDP86-00513R001755010006-6  
GOGUADZE, V.P.; TARENKO, M.I.

Color reaction for thiocyanate alkyls and the synthesis of new  
fluorescent dyes. Soob. AN Gruz. SSR 36 no.1:69-76 0 '64.  
(MIRA 18:3)

1. Institut prikladnoy khimii i elektrokhimii AN Gruzinskoy SSR.  
Submitted March 6, 1964.

L 25799-66 EWA(h)/EWT(1)  
ACC NR: AM6008542

Monograph

UR/ 28  
B+1

Tarenenko, Zoya Il'inichna (Candidate of Technical Sciences);  
Trokhimenko, Yaroslav Karpovich (Candidate of Technical Sciences)

Delay systems<sup>25</sup> (Zamedlyayushchiye sistemy) Kiev, Izd-vo "Tekhnika",  
1965. 306 p. illus., biblio. 6000 copies printed.

TOPIC TAGS: delay circuit, traveling wave, cavity resonator

PURPOSE AND COVERAGE: This book is intended for the technical personnel of industrial enterprises and design offices, and may also be used by aspirants and students in advanced courses of radio engineering and radio electronic divisions of schools of higher education. It describes the properties of delay systems in shf cathode-ray tubes, using the extensive interaction of the electron beam with the traveling-wave field. General problems pertaining to traveling-wave propagation in delay systems are described. The electrodynamic characteristics of helical, pin, comb, and lumped-parameter delay systems and of cavity resonator circuits, as well as those of some special types of delay systems, are discussed. Methods for theoretical and experimental investigation of delay systems and measurement of their basic parameters are presented.

UDC 621.385.6:621.372.81

Card 1/4

L 25799-66

ACC NR: AM6008542

TABLE OF CONTENTS:

Foreword -- 5

1. Wave propagation in delay systems -- 7
  1. Conditions for delayed wave propagation -- 9
  2. Basic theorems concerning fields in periodic structures -- 13
  3. Dispersion characteristics -- 16
  4. Field propagation in delay systems -- 23
  5. Coupling impedance. Field propagation parameter -- 27
  6. Effect of delay system characteristics on traveling-wave and backward-wave tube operation -- 32
  7. Delay system in charged-particle linear accelerators -- 36
2. Helical structure delay systems -- 39
  1. Helically conductive cylinder -- 39
  2. Tape helices -- 45
  3. Coupling impedance -- 51
  4. Multiconductor and modified helices -- 56
  5. Helix in dielectric and ferromagnetic media -- 60
  6. Attenuation -- 63
3. Rod delay systems -- 67

Card 2/4

L 25799-66

ACC NR: AM6008542

1. Theory of multiconductor lines -- 69
2. Calculation of characteristic impedances -- 74
3. Pin comb -- 77
4. Ladder systems -- 79
5. Opposing pins made of large rods -- 86
6. Opposing pins as a multiconductor line -- 90
7. Flat helix -- 98
8. Practical modifications of rod systems -- 100
4. Rib structure delay systems -- 109
1. Wave propagation above a comb structure -- 110
2. Complex comb systems -- 116
3. Axial symmetry rib structures -- 121
4. Opposing plates in a rectangular waveguide -- 131
5. Lumped-parameter delay systems -- 138
1. Dispersion equations -- 139
2. Characteristic and coupling impedance -- 145
3. Ladder circuit delay lines -- 152
4. Iterated networks of coupled circuits -- 161
5. Iterated networks of bundle six-poles circuits -- 175

Card 3/4

L 25799-66

ACC NR: AM6008542

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6. Iterated networks of coupled resonators -- 184
  1. Properties of coupled resonator circuits -- 186
  2. Iterated networks of capacitive-coupled resonator circuits -- 195
  3. Dispersion equations of inductive-coupled resonator circuits -- 200
  4. Positive mutual-inductance resonator circuits -- 208
  5. Negative mutual-inductance resonator circuits -- 220
  6. Multistage septate waveguides -- 227
  7. On the method of equivalent circuits -- 232
7. Special types of delay systems -- 236
  1. Delay systems with contactless components -- 236
  2. Delay systems with gradually changing parameters -- 243
  3. Dielectric delay systems -- 248
  4. Delay systems of traveling-wave cathode-ray tubes -- 253
  5. Ring delay systems -- 255
8. Measurement of delay-system parameters -- 262
  1. Methods of experimental investigation of delay systems -- 262
  2. Measurement of dispersion characteristics -- 264
  3. Measurement of coupling impedance -- 275
  4. Measurement of cold loss -- 283
  5. Matching of delay systems -- 286

Bibliography -- 291

List of principal symbols -- 306

Card 4/4 SUB CODE: 09/ SUBM DATE: 12Oct65/ ORIG REF: 165/ OTH REF: 122

TARENKOV, Ye.

International tourism and the services of passenger vessels.  
Mor. flot 25 no.8:40-41 Ag '65. (MIRA 18:8)

1. Kapitan teplokhoda "Feliks Dzerzhinskiy".



L 072005467

ACC NR: AT6022699

EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(l) GD

AUTHOR: Taresenko, V. P.

ORG: none

SOURCE CODE: UR/0000/66/000/000/0334/0343

31  
30  
8+1

TITLE: Automatic optimization of several plants  
 SOURCE: Moscow. Institut avtomatiki i telemekhaniki. Samoobuchayushchiyesya avtomaticheskkiye sistemy (Self-instructing automatic systems). Moscow, Izd-vo Nauka, 1966, 334-343

TOPIC TAGS: optimal automatic control, queueing theory, approximate solution

ABSTRACT: The aim of this paper is to determine probability distribution of states of a system of  $n$  plants and  $m$  optimizers ( $m < n$ ), the average length of a queue in a servicing system under settled operating conditions, and the optimum number of optimizers. The case considered is one where the probability that an optimizer will find an extremum in no more than  $k$  steps is

$$p(k) = \sum_{i=0}^k (1-p)^i p = 1 - (1-p)^{k+1} \approx 1 - e^{-p(k+1)}. \quad (1)$$

and distribution density of arriving calls  $\mu(t)$  coming from each plant for servicing is

$$\mu(t) = \lambda e^{-\lambda t}, \quad (t > 0). \quad (2)$$

Card 1/2

SUB CODE: 12,0

Card 2/2 11b

depending on the temperature of the material being rolled. The tests showed that at rolling temperatures above 800C the specific pressure of 20, 40 and 60% (with similar initial depth and variable final depth, at 800-1200C every 100C). The tests showed that at rolling temperatures above 800C the specific

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APPROVED FOR RELEASE: Thursday, September 26, 2002 CIA-RDP86-00513R001755010006-6"

ACCESSION NR: AT4048082

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APPROVED FOR RELEASE: Thursday, September 26, 2002

CIA-RDP86-00513R001755010006-6  
CIA-RDP86-00513R001755010006-6"

ASSOCIATION: LABORATORY & PROSTHESIS DEVELOPMENT AND RESEARCH

*Fidel, E. Ya.*  
BORUSHKO, I.M., inzh.; BOKHOVCHUK, M.M., inzh.; FIDEL'MAN, G.S., inzh.;  
POZIN, M.Ye., doktor tekhn. nauk; TARAT, E.Ya., kand. tekhn. nauk.

Foam dust collectors used at the concentration plant of the  
"Apatite" Combines. Bezop. truda v prom. 2 no.2:9-11 F '58.

(MIRA 11:2)

1. Kombinat "Apatit" (for Borushko, Bokhovchuk, Fidel'man). 2. Le-  
ningradskiy tekhnologicheskii institut im. Lensovetu (for Pozin,  
Tarat).

(Dust collectors)

USSR/Medicine - Infectious Hepatitis Dec 53

"The Clinical Aspects, Prophylaxis, and Treatment of Botkin's Disease in Hot Climates," Prof. E. M. Tareyev, Active Mem Acad of Med Sci USSR, Moscow

Klin Med, Vol 31, No 12, pp 3-11

Enumerates some of the achievements attained by USSR science in research on infectious hepatitis. States that manifestations of this disease, in a hot climate, may involve special types of liver morbidity. Discusses transmission of the disease by inoculation. Advocates a wider use of anti-epidemic measures, and the use of specific

274726

prophylaxis for this disease. Names as outstanding problems, the detn of the origin of Botkin's disease and development of specific methods for its treatment.

VENIGERSKAYA, Kh. Ya.; LYUBETSKIY, Kh. Z.; TAREVA, G.A.

Working conditions in testing new phosphate insecticides. Gig. 1  
san. 24 no.5:12-17 My '59. (MIRA 12:7)

1. Iz Uzbekskogo nauchno-issledovatel'skogo sanitarnogo instituta.  
(PHOSPHATES, pois.  
insecticides, pre. in indust. (Rus))

TAREVEV, YE

Vnutrennie Bolezni (Internal Diseases)

950 p. 6.00

80: Four Continent Book List, April 1954



TAREYEV, A.V.

PAVLOV, A.N., otv. za vypusk; VOLODICHEVA, V.N.; IVANOVA, A.I.; KULAKOV, I.N.; LYAMINA, T.N.; MIT'KINA, L.I.; POZDNYAKOVA, N.P.; RODIONOVA, L.I.; ROMANOVA, N.M.; SOFIYEV, E.S.; CHICHKINA, A.A.; TRESORUKOVA, Z.G.; BOGATYREV, P.P.; BROVKINA, A.I.; IVANOVA, L.D.; IVASHKIN, G.A.; KAMNEV, N.I.; LYSANOVA, L.A.; OZHEREL'YEVA, Z.I.; PAVLOVA, T.I.; TYUFYUNOVA, N.I.; UMNITSYNA, A.P.; ZHIVILIN, N.N.; ALESHICHEV, M.P.; VINOGRADOV, V.I.; YEREMIN, F.S.; KRAVCHENKO, Ye.P.; LOVACHEVA, M.V.; NIKOL'SKAYA, V.S.; MAKHOV, G.I.; SKEGINA, A.V.; TAREYEV, A.V.; KHOLINA, A.V.; BRYANSKIY, A.M.; BURMISTROVA, V.D.; GRIGOR'YEVA, A.M.; LUTSENKO, A.I.; OREKHOVA, Z.V.; TEPLINSKAYA, N.V.; PEKTIKISTOVA, V.I.; BUTORIN, I.M.; BOCHKAREVA, L.D.; BURENINA, V.A.; VETUSHKO, A.M.; VIKHLYAYEV, A.A.; SOROKIN, B.S.; TSYBENKO, L.T.; KHLEBNIKOV, V.N.; DUMNOV, D.I.; STEPANOVA, V.A.; MANYAKIN, V.I., red.; VAKHATOV, A.M.; MAKAROVA, O.K., red.izd-va; PYATAKOVA, N.D., tekhn.red.

[Soviet agriculture; a statistical manual] Sel'skoe khoziaistvo SSSR; statisticheskii sbornik. Moskva, 1960. 665 p. (MIRA 13:5)

1. Russia (1923- U.S.S.R.) TSentral'noye statisticheskoye upravleniye. 2. Upravleniye statistiki sel'skogo khozyaystva TSentral'nogo statisticheskogo upravleniya SSSR (for all except Makarova, Pyatakova). (Agriculture--Statistics)

TAREYEV, B.A.

Some applications of the absolute current method to the study of  
level variations of a shallow sea. Izv. AN SSSR Ser. geofiz. no. 7:  
813-820 J1 '56. (MIRA 9:9)

1. Akademiya nauk SSSR, Institut okeanologii.  
(Ocean currents)

September 26, 2002 CIA-RDP86-00513R001755010006-6  
TAREYEV, B. A. Cand Phys-Math Sci -- (diss) "Certain Problems of  
the Theory of Wind-Caused Fluctuations of the Level of Shallow-  
Water Sea." Mos, 1957. 78 pp 20 cm. (Marine Hydrophysical Inst,  
Academy of Sciences USSR), 110 copies (KL, 27-57, 104)

49-58-5-4/15

AUTHOR: Tareyev, B. A.

TITLE: Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time (Dreyfovyte techeniya v melkovodnom more pod deystviyem peremennogo vo vremeni vetra)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 5, pp 605-612 (USSR)

ABSTRACT: The importance of this problem arises in the following way. In wide, but shallow reservoirs, e.g. Northern Caspian or Azov Seas, a period of time of the order of the natural oscillations in the basin is required, if a horizontal pressure gradient and current gradient is to be built up. In the case of an irregular, rapidly changing wind of the type often found in practice, the surface inclination will be small and, hence, the gradient component of the resulting current will also be small compared with the drift component. This is even more the case for local winds, e.g. in the region of the Mangyshlak peninsula. Thus, in many instances, the current which arises can be considered as purely due to drift. This is useful in practical cases, e.g. navigation, where, otherwise, a calculation must be based on the average wind field, which may change. The development of drift currents in an infinitely deep homogeneous sea in the presence of Coriolis

Card 1/9

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

forces and under the influence of a constant wind which arises suddenly was first solved by Fredgol'm (Ref.1). P.A. Kitkin generalized this solution for a sea of finite depth. A further generalization to a non-stationary wind field would lead to difficulties and, as V. B. Shtokman and V. A. Tsikunov (Ref.3) have shown, would not be of great interest. In deep seas, the current is distinguished by its relative stability and, hence, reacts less to a rapid change in wind field than the current in a shallow sea. In a shallow sea, Coriolis forces can be neglected in comparison with other forces. The author considers an infinite sea of depth  $h$  over which, from the time  $t = 0$ , a spatially homogeneous wind blows. The wind can change arbitrarily in magnitude and direction. The coordinates are taken with  $x$  and  $y$  in the sea's surface and  $z$  vertically downwards. Since the continuity condition holds, only one horizontal direction ( $x$ ) is considered. Eq.(1) gives the equation of motion and Eq.(2) the boundary conditions.

$$\frac{\partial u}{\partial t} = \frac{\partial}{\partial z} \left[ \nu(z) \frac{\partial u}{\partial z} \right] \tag{1}$$

49-58-5-4/15

Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

$$\frac{\partial u}{\partial z} = \frac{T(t)}{\rho \nu} \quad \text{at } z = 0; \quad u = 0 \quad \text{at } z = h; \quad u = (z, 0) = U_0(z) \quad (2)$$

$u$  is the velocity component along the  $x$ -axis,  $\nu(z)$  is the kinematic coefficient of turbulent viscosity which, generally speaking, depends on  $z$ ;  $\rho$  is the constant density;  $T(t)$  is the tangential stress of the wind along the axis (a given function of time which depends only on certain, very general, conditions). Consider first the simplest case with periodic boundary conditions which gives a closed solution.  $\nu$  is taken to be constant and Eqs. (1) and (2) written in the form Eqs. (3) and (4), where  $\tilde{u}(z, t)$  is a complex function, the real part of which equals  $u(z, t)$ . Substituting  $\tilde{u}(z, t) = e^{-i\omega t} Z(z)$ , a differential equation is obtained which is integrated in accordance with the boundary conditions to give:

$$\tilde{u}(z, t) = e^{-i\omega t} \frac{T_0}{\gamma \mu} \frac{\sin \gamma(h-z)}{\cos \gamma h}$$

Separating the real and imaginary parts of this expression, Eq. (6) is obtained. In the case of an arbitrarily time-varying tangential stress, an elementary solution can be

Card 3/9

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

obtained from Eq.(3). F'el'stad (Ref.4) and Khidaka (Ref.5) have shown that the result is Eq.(8), which changes into Eq.(9) for  $T = \text{const.}$  A numerical example for a periodically varying wind is given. The period of tangential stress change  $\pi = 2\pi \times 10^4 \text{ sec} \sim 17.5 \text{ hours}$ , coefficient of turbulent kinematic viscosity,  $\nu = 50 \text{ cm}^2/\text{sec}$ . Taking the unit of length to be 1 m and unit of time  $10^4 \text{ sec}$ ;  $\gamma = 50$ ,  $\omega = 1$ , and  $\alpha = \sqrt{\frac{\omega}{2\nu}} = 0.1 \text{ m}^{-1}$ . Fig.1 shows the results obtained for the velocity distribution with depth at different times. As can be seen from Fig.1, in the layer from  $z = 0.46 \text{ h}$  to the bottom a counter-current is observed periodically. Observation of suitable velocity distributions in natural conditions might lead to incorrect conclusions concerning the gradient of these counter-currents, if the non-stationary wind field is not considered. Eqs.(6) and (7) permit the calculation of the stress at the bottom. Fig.2 shows the variation with time of the tangential wind stress at the surface and the

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

tangential stress at the bottom, whilst Eq.(11) gives the result based on the figures introduced above. Fig.2 and Eq.(11) indicate that the greatest possible value of the ratio  $T_{\text{bottom}}/T_{\text{surface}} = 0.77$ . However, Francis' (Ref.6)

experiments show that this ratio does not exceed 0.03 in practice. It is obviously necessary to take into account the variation of  $\nu$  with depth. This is done by employing Eq.(12) which gives a linear variation with depth to a small distance from the bottom, characterized by the empirical parameter  $\epsilon$ . It can be considered that  $\epsilon$  is proportional to the thickness of the laminar layer - F'el'stad thinks that  $\epsilon/h \sim 10^{-2} - 10^{-3}$  (Ref.7). Choice of this parameter becomes more objective if it is assumed that the coefficient of turbulent velocity near the bottom is equal to the coefficient of normal molecular viscosity. In Eq.(12)  $\nu_0$  is the co-

efficient of turbulent viscosity at the surface. Hidaka (Ref.8) considered the case of  $\nu$  varying with depth (with  $\epsilon = 0$ ). The author now considers the case with non-vanishing viscosity at the bottom. Eq.(1) is rewritten in the form Eq.(13) and the boundary conditions, Eq.(2) are



49-58-5-4/15

Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

used with  $u_0(z) \equiv 0$ . A solution of the form Eq.(14) is looked for with the boundary and initial conditions Eq.(15) and (16). This gives Eq.(17) into which the substitution  $\bar{u} = G(t)R(z)$  is made. Changing the independent variable  $z$  a differential equation for  $R$  is obtained, with the boundary conditions (Eq.20). The integral of this can be written in the form Eq.(21), where  $J_0$ ,  $N_0$  correspond to the Bessel and Neumann functions of zero order and  $\gamma_n$  is the root of the transcendental equation (Eq.22). A general solution of Eq.(17) by series is now sought, with change to a new variable  $y$ . Employing formula (19) and the expression for the Wronshian cylindrical function of zero order, the coefficients  $C'_n$  and  $C''_n$  in Eqs.(24) and (25) are defined. The boundary conditions (Eq.20) and an integral formula for  $Z_0$  (any solution of Bessel's equation of zero order) are now used to determine  $\|R_n\|^2$ . Eq.(27) is now obtained from Eqs.(23), (17), (18), (24) and (25), and is integrated.

49-58-5-4/15

# Drift Currents in a Shallow Sea under the Influence of a Wind Varying with Time.

The final solution is found in the form of Eq.(29): all the calculations can be carried out with the variable  $y$ , and the change to  $z$  left until the final stage. If  $v_0$  is put equal to zero, as was done by Hidaka, the solution is made much simpler since the Neumann function disappears. The solution can also be used for a viscosity coefficient varying with time as in Eq.(30) - this gives Eq.(31). If we assume the coefficient to be constant with time this implies that turbulence is fully developed throughout all the region. However, in a shallow sea, a non-stationary wind produces a turbulent viscosity varying with time. Unfortunately, the time dependence cannot be determined owing to the absence of data. In the case of a suddenly arising wind which thereafter remains constant, it is natural to use:  $f(t) = (1 - e^{-\omega t})$  in Eq.(30), where  $\omega > 0$  is a parameter, characterizing, to a first approximation, the development of turbulence in a sea under the influence of a wind. Using this  $f(t)$ , the exponential factor  $m$  (Eq.9), characterizing the change of current velocity with time has the form:

Card 7/9

49-58-5-4/15

Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

$$\exp \left\{ - \nu \left( \frac{2n+1}{2h} \pi \right)^2 \left[ t - \frac{1}{\omega} (1 - e^{-\omega t}) \right] \right\}$$

for sufficiently large  $t$ , this approximates to:

$$\exp \left[ - \nu \left( \frac{2n+1}{2h} \pi \right)^2 \left( t - \frac{1}{\omega} \right) \right]$$

In other words, with a  $\nu$  increasing exponentially from zero to a fixed value, a certain fixed velocity will be observed at the moment  $t_1 + \frac{1}{\omega}$ , whereas with  $\nu = \text{constant}$

this value will be observed at  $t_1$ . In view of the function used, the velocity at the start will increase very rapidly with time, which seems to be confirmed by

49-58-5-4/15  
Drift Currents in a Shallow Sea under the Influence of a Wind  
Varying with Time.

observations in the North Caspian. A more detailed estimate  
cannot be made without more information on the function  $f(t)$ .  
There are 2 figures and 8 references, of which 3 are Soviet,  
3 German and 2 English.

ASSOCIATION: Akademiya nauk SSSR, Institut okeanologii (Academy of  
Sciences, USSR, Institute of Oceanography)

SUBMITTED: February 21, 1957.

1. Ocean currents--Meteorological factors

SOV/49-58-9-12/14

AUTHOR: Tareyev, B.A.

TITLE: Stationary Circulation due to Wind in a Square Basin of Small Depth (Statsionarnyy vetrovoy nagon i tsirkulyatsiya v pryamougol'nom basseyne maloy glubiny)

PERIODICAL: Izvestiya Akademii Nauk SSSR, Seriya Geofizicheskaya, 1958, Nr 9, pp 1139 - 1144 (USSR)

ABSTRACT: It is shown in Ref 1 that if horizontal viscosity and non-linear terms are ignored, the question of stationary wind circulation in a shallow sea depends on the solution of the equation:

$$\frac{\partial}{\partial x} \left( \frac{1}{h^3} \frac{\partial \phi}{\partial x} \right) + \frac{\partial}{\partial y} \left( \frac{1}{h^3} \frac{\partial \phi}{\partial y} \right) = \frac{1}{2\mu} \text{curl}_z \frac{T}{h} \quad (1)$$

where  $h(x, y)$  is the depth of the sea,  $T(x, y)$  is the tangential stress of the wind on the surface,  $\mu$  is the coefficient of vertical turbulent viscosity and  $\phi$  is defined by the Eqs.(2). Eq.(1) has the boundary condition (3) on the contour  $\Gamma$  of the sea, i.e. the component of

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

the total current normal to the shore line equals zero. Having solved Eq.(1) with this boundary condition, the inclination and velocity components can be found from Eqs.(4) and (5).

Obviously, Eq.(1) has no significance for  $h \rightarrow 0$ ; in particular, the inclination of the level increases without bound. This singularity is due to the fact that near  $h \rightarrow 0$ , the perturbation of the level  $\zeta$ , cannot be considered small compared with  $h$ . In numerical integration, this can, of course, be avoided by assuming the coastline to be a vertical step.

The present article considers a constant depth basin. For small depths, the Coriolis forces can be ignored and, hence, Eq.(1) reduces to:

$$\Delta\psi = \frac{h^2}{2\mu} \text{curl}_z \underline{T} \quad (6)$$

One method of solving the equation has been given by Leibenson (Ref 2), who assumed that the coefficients of vertical and horizontal turbulent exchange were of the

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

same order.  
The author assumes the  $\psi = X(x) \cdot Y(y)$  and separates the variables. For a basin of width  $l$  and length  $2L$ , the boundary conditions become

$$\psi = 0 \text{ when } x = 0, l \text{ and } y = \pm L.$$

It is assumed first that the wind blows along the  $y$ -axis and changes only along the  $x$ -axis. Then:

$$T_x = 0; \quad \text{curl}_z T = \frac{dT_y(x)}{dx}.$$

Assuming  $X$  proportional to  $\sin \lambda_n x$ , gives Eq.(9).  
 $Y_n$  is then found from Eqs.(9) and (10) and, hence, the general solution of (6), satisfying the conditions (8), has the form (12). If the length of the basin along the  $z$ -axis is very great (i.e. a canal), Eq.(12) simplifies to give (15) for the inclination of the level. Thus, the free surface has the form of a plane (an analogous result was

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

obtained by A.I. Felzenbaum (Ref 1) ). The author next considers the general case ( $L \neq \infty$ ). The centre of co-ordinates is now moved to the centre of the basin (Figure 1) so that the boundary conditions become Eq.(16). It can be seen from Eq.(7) that the solution will depend on  $\cos a_n x$  (where:

$$a_n = \frac{\pi}{2} \cdot \frac{2n+1}{L} \quad \text{for } n = 0, 1, 2, \dots$$

$\text{curl}_z \underline{T}$  is denoted by  $f(x, y)$  and an equation, analogous to (9), is obtained for  $Y_n(y)$ . Integration of this gives Eq.(18) for  $\phi$ . It is next assumed that the circulation can be expressed in the form:

$$T_x = a_1 y + b_1 ; \quad T_y = a_2 x + b_2 \quad (19)$$

so that:

$$\frac{\partial^2}{\partial x^2} \text{curl}_z \underline{T} = \text{const.}$$

Card4/7



SOV/49-58-9-12/14

# Stationary Circulation due to wind in a Square Basin of Small Depth

This gives Eq.(20) for  $\phi$ , which can be rewritten in the form (20a). It can be seen from Eqs. (6) and (16) that horizontal circulation is absent, not only for a constant wind but also when the field of the tangential wind stress is variable but is a scalar potential. The author next considers the case when  $T_x = 0$ ,

$T_y = ax + b$  (wind along the y-axis, the change in tangential stress characterised by  $a$ ). This can be reduced, using Eqs.(20a) and (4), to an approximate expression  $\partial\phi/\partial x$ , the inclination in a direction transverse to the wind. This can be simplified further near  $y = \pm L$  if  $L \gg 2l$ , since :

$$\frac{\text{ch} \left[ \frac{2n+1}{2l} \pi(\pm L) \right]}{\text{ch} \left[ \left( \frac{2n+1}{2l} \right) \pi L \right]} \approx \pm 1.$$

Card5/7

SOV/49-58-9-12/14

# Stationary Circulation due to Wind in a Square Basin of Small Depth

It follows from the expressions for  $\partial \phi / \partial x$  and  $\partial \phi / \partial y$  that, for  $y = 0$ ,  $S_x = 0$  and, for  $x = 0$ ,  $S_y = 0$ . The difference is that, in the first case, both the total current and the  $x$  component  $= 0$ . Figure 1 shows diagrammatically the general character of the circulation corresponding to Eq.(20) for  $a_2 = a$ ,  $a_1 = 0$ . It can be seen that for  $a > 0$ , a cyclonic circulation is obtained and with  $a < 0$  an anticyclonic. Circulation in an actual basin is, of course, more complicated than that described owing to the neglect of horizontal turbulent viscosity in the above calculations. However, the inclusion of this factor in the equations would lead to excessive difficulty in solution.

Stationary Circulation due to Wind in a Square Basin of Small  
Depth

SOV/49-58-9-12/14  
There are 1 figure and 2 Soviet references.

ASSOCIATION: Akademiya nauk SSSR, Institut okeanologii  
(Ac.Sc. USSR, Institute of Oceanology)

SUBMITTED: October 3, 1957

Card 7/7

TAREYEV, B.A.

FEDEROV, L.N.; BOGOROV, V.G.; and TAREYEV, B.A.

"The depths of the ocean and the problem of waste disposal therein."

report presented at the Scientific Conference on the Disposal of Radioactive Wastes, Monaco, November 1959.

1986-1735010006-6  
20, 2002 CIA-RDP86-00513R001755010006-6  
TAREYEV, B. A., FEDOROV, K. M. and BOGOROV, V. G.

"The Depths of the Ocean and the Problem of Waste Disposal Therein."

report presented at the Scientific Conference on the Disposal of  
Radioactive Wastes, Monaco, 16-21 November 1959.

SOV/20-127-5-19/58

3(9)

AUTHOR:

Tareyev, B. A.

TITLE:

On Free Convection in Deep-water Cavities of the Oceans

PERIODICAL:

Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 5, pp 1005-1008 (USSR)

ABSTRACT:

In cooperation with the problem of the sinking of radioactive waste products of the atomic industry into the oceans, the author investigates the possibility of water circulation in great depths. It follows from observations that a noticeable superadiabatic temperature increase occurs with increasing depth. This phenomenon is explained by geothermal heat supplies. Therefore, the entire depth must be divided into two layers which are separated by that surface, on which the gradient of the potential temperature passes through zero. The lower layer, in which the potential temperature increases with depth, is described as convective layer by the author. Rayleigh (Ref 2) already pointed out that at a certain value of the dimensionless parameter (Rayleigh number  $R$ ) convection currents may occur in a horizontal layer of water, which is heated from below. As in the present case the rotation of the earth must be taken into account, the system of equations is written down for the

Card 1/2

SOV/20-127-5-19/58

On Free Convection in Deep-water Cavities of the Oceans

Coriolis forces, and the boundary conditions for the surface separating the convective layer and the water masses on the opposite side, as well as the thresholds of instability are deduced. The values found show that already at very small negative superadiabatic temperature gradients ( $0.01^\circ$  to  $100^\circ$ ), the Rayleigh numbers are above the critical value, and that convection must occur in spite of the stabilizing effect of the rotation of the earth. There are 1 figure and 4 references, 1 of which is Soviet.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: April 30, 1959 by V. V. Shuleykin, Academician

SUBMITTED: April 30, 1959

Card 2/2

S/010/00/000/004/002/006/XX  
A053/A026

AUTHORS: Bogorov, V.G.; Tareyev, B.A.

TITLE: Oceanic Depths and the Problem of Dumping Radioactive Waste

PERIODICAL: Izvestiya Akademii nauk SSSR, seriyagornicheskaya, 1960, No. 4,  
pp. 3 - 10

TEXT: The authors refer to the recommendation given by V.G. Bogorov and Ye.M. Kreps at the II International Conference on the Peaceful Utilization of Atomic Energy in Geneva in September 1958, to the effect that the dumping of radioactive waste in depths of the ocean should not be permitted. In this article the authors furnish new proof in favor of their viewpoint based on the latest observations made by Soviet and foreign oceanologists, in particular on the occasion of the Danish expedition on the SS Galatea in 1952 and the Soviet expedition on the SS Vityaz' in 1958. The article compares the 23 deepest depressions in the Pacific, the Atlantic and the Indian Ocean, in indicating maximum depths and their location. It also gives information on the prevailing temperatures at various depths ranging from 0 to 10,000 m in different areas and at different seasons. These temperatures even at maximum depths are subject to variations

Card 1/4



S/010/60/000/004/002/006/XX  
A053/A026


#### Oceanic Depths and the Problem of Dumping Radioactive Waste

which permits to conclude that nowhere the water is stagnant but constantly on the move, however slow this movement may be in certain places. The vertical movement of the water in the depths of the Philippine and the Bougainville depressions have been calculated as being  $10^{-4}$  cm<sup>2</sup>/sec or about 30 - 50 m per annum. The speed of horizontal movement of ocean water as a rule exceeds by far that of vertical movement, particularly in the upper layers. The article refers to investigations carried out in recent years pertaining to depth circulations, mentioning the findings of Doctor Swallow and of Doctor Laughton. The article cites a number of other phenomena, which all tend to prove the movement of water, resulting in a continuous agitation and mixing process, which creates favorable conditions to the development of life, even down to the greatest oceanic depths. During deep-sea trawling of the Vityaz' in 1958 in the Pacific, going down to a depth of 10,700 m, the existence of fauna was revealed even in these ultraabyssal depths, consisting of sponges, worms, mollusca, etc, though in small quantities, because at a distance of 10 km from the photosynthesizing layers only very little food is brought down. Life in the mass of water is in a state of constant migration. Even plankton covers considerable distances. The migration of ani-

S/010/60/000/004/002/006/XX  
A053/A026

### Oceanic Depths and the Problem of Dumping Radioactive Waste

mals and biocirculation are a powerful means of transportation of all kinds of substance including absorbed radioactivity. Harley found that in a district west of the Bikini Atoll radioactivity of plankton was 470 times greater than elsewhere in the ocean. Japanese authors state that as a result of radioactive fallout infected fishes were found near the Marshall Islands, later on near the Caroline Islands and further north near Taiwan and the Bonin Isles. Fishes caught within a radius of 3,000 km of the district of Bikini had to be destroyed on account of their radioactivity. This district being the spawning place of tuna and swordfish, it is likely that its contamination by radioactive fall-out will be of far-reaching consequences in the way of infected tunafish, in which connection the authors refer to the findings of the Japanese scientists Y. Miyake and Y. Sugura. Interesting in this respect is also the theory developed by R.H. Ketchum and T.V. Bowen concerning the physical and biological transfer of different substances, concluding that biological transfer often exceeds the role of the physical mixing process. In respect to biocirculation a great deal of research work remains yet to be done, especially in deep-water circulation, although it is known that big plankton migrates in deep layers (down to 6 km). Thus radioactive waste buried in the depth of the ocean, when dissolved will rise



Card 3/4

S/010/60/000/004/002/006/XX  
A053/A026

#### Oceanic Depths and the Problems of Dumping Radioactive Waste

by means of physical as well as biological circulation and eventually endanger the life of human beings. The theory that the radioactive substances after a while will be dispersed and in a dissolved state mix with the entire mass of water is ill founded. Water currents are localized and the same refers to biocirculation following a certain cycle. The authors agree with H.T. Dunster that the disposal of radioactive wastes in coastal waters is highly dangerous, and so is the dumping of such wastes in the depths of the ocean. Further investigation and research work should clarify in particular: "The behaviour of radioactive substances in the ocean." - "The accumulation of radioactive substances in marine organisms and their tissues." - "The age of different layers of water and the duration of a certain mass of water remaining in a given layer, types and speeds of mixing processes." - "Speeds of vertical and horizontal circulations of different layers." - "Biocirculation, daily, seasonal, multiannual!" - "Geo-chemical factors influencing distribution of radioactive substances". There are 16 references: 9 Soviet, 6 English and 1 Japanese.

ASSOCIATION: Institut okeanologii AN SSSR (Institute of Oceanology, Academy of Sciences, USSR)

Card 4/4

TAREYEV, B.A.

Theory of convection circulation in oceanic trenches. Izv.  
AN SSSR.Ser.geofiz. no.7:1022-1029 J1 '60.  
(MIRA 13:7)

1. Akademiya nauk SSSR, Institut okeanologii.  
(Ocean currents) (Ocean bottom)

IVANOV, Yu.A.; TAREYEV, B.A.

Calculating the vertical velocity component of drift currents. Trudy  
MGI 22:3-4.'60. (MIRA 14:3)

(Ocean currents)

TAREYEV, B. A., and FOMICHEV, A. V.,

"Geostrophic currents in the Antarctic sector of the Pacific."

To be submitted for the 10th Pacific Science Congress, Honolulu, 21 Aug. - 6 Sep 1961.

Institute of Oceanology.

NAUMOV, A.G.; ZERNOVA, V.V.; IVANOV, Yu.A.; TAREYEV, B.A.

Frontal zones and biogeographic division of the surface waters  
( 0 - 500m.) of the southern part of the Pacific Ocean based on plankton.  
Trudy Inst.ocean. 58:54-66 '62. (MIRA 15:12)  
(Pacific Ocean--Plankton)

TAREYEV, B.A.

Estimation of the nature of heat convection and turbulent heat  
conduction as applied to the Antarctic circumpolar waters.  
Okeanologiya 2 no.1:31-43 '62. (MIRA 15:2)

1. Institut okeanologii AN SSSR.  
(Antarctic regions--Ocean temperature)



TAREYEV, B.A.

Internal waves in an ocean inhomogeneous with respect to density.  
Dokl. AN SSSR 149 no.4:827-830, Ap '63. (MIRA 16:3)

1. Institut okeanologii AN SSSR. Predstavleno akademikom V. V. Shuleykinym.

(Seawater—Density) (Waves)

TAREYEV, B.A.

9

Internal baroclinic waves in flowing around the irregularities  
of the bottom and their effect on processes of sediment forma-  
tion. Okeanologia 4 no.5:915 '64 (MIRA 18:1)

X

TAREYEV, B.A.

Possibility of the formation of natural vertical convection in  
some regions of the Indian Ocean. Trudy Inst. okean. 64:50-52  
'64. (MIRA 177)

TAREYEV, B.A.

Internal baroclinic waves observable during the flow around  
the unevennesses of the floor and their influence on the  
deposit-forming processes in the ocean. Okeanologiya 5 no.1:  
45-51 '65. (MIRA 18:4)

1. Institut okeanologii AN SSSR.

TAREYEV, B.A.

Quasi-geostrophic instability of ocean currents. Dokl. AN SSSR 162  
no.1:74-77 My '65. (MIRA 18:5)

1. Institut okeanologii AN SSSR. Submitted September 17, 1964.

ACC NR: AR7004103 (N) SOURCE CODE: UR/0169/66/000/012/V021/V021

AUTHOR: Tareyev, B. A.

TITLE: Some consequences of the dynamic instability of ocean currents

SOURCE: Ref. zh. Geofizika, Abs. 12V127

REF SOURCE: Sb. 2-y Mezhdunar. okeanogr. kongress, 1966. Tezisy dokl. M., Nauka, 1966, 368

TOPIC TAGS: ocean current, approximation method, perturbation, ocean current instability

ABSTRACT: The problem of the stability of geostrophic baroclinic zonal ocean currents is studied with methods of approximation. The solution takes into account the vertical shift of main current velocity, vertical motions, stratification,  $\beta$ -effect, inertial forces, and the horizontal eddy viscosity. Internal waves were filtered by introduction of a quasi-geostrophic approximation of the perturbation field. It is shown that for the real values of oceanographic parameters, the intense circulation systems such as the Gulf Stream, Kuroshio, and trade wind currents are dynamically

Card 1/2

UDC: 551.465.55

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unstable, and, consequently, cannot be steady. Periods of unstable, large-scale quasi-geostrophic perturbances occurring on the background of the main current have a duration of several days to several weeks. These periods are determined by the natural dynamic structure of the current and do not depend on the action of external factors (changes in tangential stress of the wind, influx of heat from the atmosphere etc). The wavelength of the more unstable large-scale oceanic perturbations is of the order of several hundred kilometers. The natural scale of horizontal turbulences must be accordingly of the same order. In connection with the phenomena of instability, the possibility of forecasting time variations of ocean currents is naturally reduced. However, some statistical characteristics of spectral function type can be calculated on the basis of the mean values of characteristic quantities (shift of velocity, stratification etc). The absence of long series prevents a comparison of calculations with observations. However, coordinated surveys in the Gulf Stream region show that the calculations yield a correct order of values. Some evaluations show that unsteady increasing (and fading) perturbations play a substantial role in the energy balance of the mean oceanic circulation. [Translation of abstract] [DW]

SUB CODE: 08,12/

Card 2/2

APPROVED FOR RELEASE: 26 September 2002  
APPROVED FOR RELEASE: 26 September 2002

PROCESSING AND PROPERTIES INDEX

**The Oxidation of Light Metals.** B. M. Tarver (*Legkie Metalli (Light Metals)*).  
1982, (12), 42-48).—(In Russian.) A description of methods of oxidizing  
aluminum, as employed in the U.S.S.R. and abroad, for increasing its anti-  
corrosion properties and especially for insulation purposes.—D. N. S.

ASB-55A METALLURGICAL LITERATURE CLASSIFICATION

1ST AND 2ND GROUPS										3RD AND 4TH GROUPS									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
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PROCESSING AND PROPERTIES INDEX

11

21

The Use of Light Metals in the Electrical Industry. H. M. Tarrey (*Legkie Metalli* (Light Metals), 1933, (1), 17-22).--[In Russian.] An examination of the feasibility of using light metals and alloys as electrical conductors.  
D. N. N.

ASTM-ISA METALLURGICAL LITERATURE CLASSIFICATION

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APPROVED FOR RELEASE Tuesday, September 20, 2000  
APPROVED FOR RELEASE Thursday, September 26, 2002

CONFIDENTIAL  
CONFIDENTIAL

1ST AND 2ND CROSS

100 AND 4TH CROSS

PROCESSES AND PROPERTIES INDEX

11

21

**Pistons of Light Alloys.** H. M. Tarcev (*Legkie Metalli (Light Metals)*, 1932, (5), 29-30). [In Russian.] Advantages and drawbacks of pistons for internal combustion engines made from light alloys are enumerated and a list of such alloys is given. - D. N. N.

ASH SIA OPTALLROKAL LITERATURE CLASSIFICATION

EXAMINATION

EXAMINATION

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



APPROVED FOR RELEASE: Thursday, September 26, 2002  
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1ST AND 2ND COLUMNS  
PROCESSES AND PROPERTIES INDEX

COMMON ELEMENTS  
COPPER  
INTERNAL INDEX

1100-11000000-00000000

Electrokinetic phenomena in dielectrics. III. Conductivity of colloidal systems of various concentrations, colloidal particle sizes and temperatures. B. M. JAFFE, and V. A. BACV. *Colloid J. (U. S. S. R.)* 2, 771-5 (1937); cf. *C. A.* 32, 6120'.—Math. Equations are given showing electrocond. of colloidal systems as a function of concn. and particle size of the dispersed phase and of temp. Electrocond. increases with increase of concn. and particle size. With rise of temp. electrocond. at first increases, then passes through a maximum and finally decreases. The electrocond. of a colloidal system may be greater than that for each phase separately.  
S. L. Markovskiy

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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CA

13

**Castor oil as a dielectric.** B. M. Fateev and G. I. Kainchukova. *Sovetsk. Elektrom.* 1939, No. 10, 41-44. The chem., elec. and phys. properties of castor oil are reviewed. The dielect. resistance of castor oil is of the same order as transformer oil or Sovol. The resistance is lowered by addn. of water but is not affected by addns. of transformer oil and Sovol in amts. up to 50%. The sp. vol. resistance of castor oil and mixts. thereof with 1-5% of transformer oil or Sovol is of the order of  $5 \times 10^9 - 8 \times 10^{10}$  ohm-cm. Mixts. of castor oil with 1-5% water are conducting.

B. Z. Kamich

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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9 1.34, 9.34 1.34

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PROCESSING AND PROPERTIES INDEX

CP

2

Thermal conductivity of colloidal systems. B. M. Tatarskiy. *Colloid J. (U. S. S. R.)* 6, 846-50(1940).--The approx. value of the heat cond. ( $\kappa$ ) of a system of spheres in a homogeneous medium can be calcd. by the formula:  $\kappa = (2 + \kappa + 2e(\kappa - 1))/(2 + \kappa - e(\kappa - 1))$  where  $e$  is the vol. concn. of sphere material and  $\kappa$  is its thermal cond. A. A. Podgorny

ASB-ELA METALLURGICAL LITERATURE CLASSIFICATION

EDOH NOMIN

EDOH SYNGE

EDOH M19 OHV GSE

EDOH M19 OHV GSE

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Heat-resistant mica. H. M. Tazov; I. A. Rpshtein  
 and K. I. Chernyak. *Vestnik Elektrom.* 11, No. 3,  
 35 (1940); *Chem. Zvest.* 1940, 11, 1781.---Mica  
 prepul. from mica waste and either Na silicate or an alkyl  
 were tested for use in electric heaters (resistors); both  
 types were satisfactory. M. Housh

ASSOCIATED METALLURGICAL LITERATURE CLASSIFICATION  
 FROM STEELWORK

FROM BORING  
 REARLY ONE ONE 101







TAREEV, B.M.

The production of glass electric resistors, Moskva, Gos. energ. izd-vo, 1944.  
26 p. (50-44428)

TK2851.T38

TARDEV, B. M.

Electrical engineering materials, Moskva, Gos. energ. izd-vo, 1946. 231 p. (50-19007)

TK453.T3

TAREYEV, B. M.

TAREYEV, B. M.

Tareyev, B. M. defended his Doctor's dissertation in the Moscow Power Engineering Institute im Molotov, USSR, on 13 April 1943, for the academic degree of Doctor of Technical Sciences.

Dissertation: "Heat-Stable Electrical Insulation". Resume: Tareyev treated factors affecting the heat stability of electrical insulation, the determination of heat stability of materials, and its dependence on chemical composition, as well as problems related to the thermal conductivity of insulation. He also cited the results of a number of his scientific research works and new production developments dealing with concrete forms of insulating materials with relatively high heat stability: liquid and solid organic materials, aluminum oxide insulation, asbestos materials, glass-fiber materials, vitreous enamels, mica, and its substitutes.

Official Opponents: Profs. N. V. Aleksandrov, N. P. Bogoroditskiy (Doctors of Technical Sciences); G. I. Skanavi, B. M. Gokhberg, (Doctors of Physicomathematical Sciences).

SO: Elektrichestvo, No. 7, Moscow, August 1953, pp 37-92 (W/29344, 16 Apr 54)

TAREYEV, B. M.

USSR/Electricity  
Insulating Materials  
Insulators

Jan 48

"Work of the All-Union Bureau of Electric Insulation in 1946-1947," B. M. Tareyev, Cand Tech Sci, Sci Secy, All-Union Bu of Elec Insulation, 1 p

"Elektrichestvo" No 1

Briefly touches on major achievements of subject bureau for 1946-1947.

4/49T31

TAREYEV, B. M.

USSR/Electricity

Jan 48

"The Oldest Czechoslovakian Electrical Journal,  
'Elektrotechnicky Obzor' (Electrical Engineering  
Outline)," B. M. Tareyev, Cand Tech Sci, S. P.  
Inozentsev, Engr, 1 p

"Elektrichestvo" No 1

Compliments subject journal for the high-level  
technical information which it has consistently con-  
tained.

4/49 T29

TAREYEV, B. M.

"Lectures on the 'Electrical Materials' Course" (Lektsii po kursu "Elektromaterialovedeniye") No 3, Electrical Insulating Glasses, Editing and Publishing Division of VZEI (All-Union Correspondence Power Engineering Institute), 1949, 24 pp.



TAREEV, B. M.

personala, Electrical engineering materials, Izd. 3., perer. Moskva, Gos. energ. izd-vo, 1949,  
232 p. (50-22181)

TK453.T3 1949

TAREYEV, B. M.

PA 35/49T27

USSR/Electricity  
Insulation, Electrical  
Bibliography

Jan 49

"All-Union Scientific-Technical Congress on Elec-  
trical Insulation," B. M. Tareyev, Dr Tech Sci, Secy,  
All-Union Bu of Elec Insulation, 2 pp

"Elektrichestvo" No 1

Session was held 4-8 Oct 48 in Leningrad with 389  
engineers and teachers participating. Fifty-four  
reports on electrical insulation problems were  
submitted.

35/49T27

TAREYEV, B. M.

USSR/ Electricity Electric Power Publications

Apr 49

"New Books on Power Engineering" 1 p

"Elek Stants" No 4

Brief reviews include: N. K. Bodashkev's "Breakdowns in Stream Turbines and Their Prevention," G. K. Zherbe's "Testing Asynchronous Motors After Repairs," T. A. Zikheyev and A. I. Karelin's "Analysis of Power Fuels," "Installation and Operation of High-Pressure Boilers," edited by S. Ts. Fayerman and S. M. Shukher, "Handbook on Electrical Insulation," edited by Yu. V. Koritskiy and B. M. Tareyev, and F. A. Stupel's "Automatic and Protective Relays,"

PA 55/49T27

TAREYEV, B. M.

USSR/Engineering

May 49

Drying  
Currents, High-Frequency

"Review of I. P. Berdinskikh's Book, 'Kiln Drying and Bonding of Ligneous Materials in a Field of High-Frequency Currents,'" B. M. Tareyev, Dr Tech Sci, Netushil, Cand Tech Sci, Docent N. A. Arkhangel'skiy, Engr, E. P. Parin, Engr, 1 p

"Elektrichestvo" No 5

Does not inclose material in this book, which consists of three main parts: Generators (electron tubes, gaseous rectifiers, etc.), drying, and bonding. Points out numerous deficiencies in

55/49T50

USSR/Engineering (Contd)

May 49

author's analysis of his subject and lists examples of glaring errors in text. Published by Gos-tekhnizdat Ukraine, 1948, 120 pp, price 5 rubles.

55/49T50

157T22

USSR/Electricity - Insulation, Electric  
Dielectrics Jan 50

"Heat-Resisting Porous Insulation," Prof B. M. Tere-  
yev, Dr Tech Sci, Ya. M. Parnas, Cand Tech Sci, All-  
Union Corr Power Eng Inst, 5 pp

"Elektrichestvo" No 1

Notes advantages of nonimpregnated inorganic fiber  
insulation in gaseous medium with high working tem-  
perature and sharp temperature impulses. Deduces  
formulas for breakdown voltage, dielectric constant,  
and dielectric loss angle of glass fabric as temper-  
ature varies. Gives results of experimental verifi-  
cation of proposed formulas, confirming feasibility

157T22

USSR/Electricity - Insulation, Electric Jan 50  
(Contd)

of using nonimpregnated inorganic fibrous ma-  
terials as heat-resistant electrical insula-  
tion. Submitted 8 Jun 49.

157T22

TAREYEV, B. M., PROF

TAREYEV, B.M.

PHASE X

TREASURE ISLAND BIBLIOGRAPHICAL REPORT

AID 757 - X

Call No.: AF630350

BOOK

Author: TAREYEV, B. M.

Full Title: ELECTRICAL ENGINEERING MATERIALS (Fourth Issue,  
Reviewed)

Transliterated Title: Elektrotekhnicheskiye materialy

PUBLISHING DATA

Originating Agency: None

Publishing House: State Power Engineering Publishing House

Date: 1952

No. pp.: 288

No. of copies: 25,000

Editorial Staff: None

PURPOSE AND EVALUATION: This book is intended for workers in power system plants and repair shops, and contains the description of properties, grades, testing methods and treatment of materials most frequently used in electrical engineering. The book's value lies in its detailed description of many chemical compounds, which by giving their basic data and characteristics as established by the "GOST" standards, permits an insight into methods used in Soviet power engineering.

TEXT DATA

Coverage: The book is divided into 12 chapters, which give

**Elektrotekhnicheskiye materialy**

information on dielectric materials in the first 8 chapters and on conductors in the last four. For a more detailed account see "Table of Contents".

**Annotated Table of Contents****Introduction**

Pages

5-10

11-21

**Ch. 1 General Information on Insulating Materials**

Electric resistivity, dielectric constant, losses and strength.

21-28

**Ch. 2 Gaseous Insulating Materials**

Air and various gases: The work of Professor B. M. Gokhberg on "elegas" (gaseous SF<sub>6</sub>) is reported.

28-66

**Ch. 3 Liquid Insulating Materials**

Transformer oil: properties, data, testing, "GOST" standard requirements, diagrams of testing equipment (AMI-60 type), nitrogen treatment, description of various regeneration devices with diagrams.

Various liquid insulating materials: cable oil with increased viscosity. Condenser oil: basic data according to "GOST" standards, "sovol" (diphenyl C<sub>10</sub>H<sub>12</sub>) and "sovtol" compounds developed by Professor Andrianov according to technical specifications of the NKKhP.

AID 757 - X

## Elektrotekhnicheskiye materialy

Pages  
66-116

### Ch. 4 Congealing Insulating Materials

Resins: thermoplastic and thermo setting; colophony (also used in oil varnish), "GOST" standard specifications; shellac (only imported); amber; phenolic resins: bakelite, iditol and "sovenit" (basic data attached) developed in the USSR, used in the radio industry; glyptal, nitrocellulose, acetyl-cellulose, ethyl cellulose; vinyl group: polychlorvinyl, perchlorvinyl; polystyrene, congealed and emulsion (developed by A. F. Ioffe according to All-Union Technical Specifications of the MKhP and used in radio engineering, basic data given); polyethylene (basic data); polyisobutylene (basic data); polymethylmetacrylate (used for "organic glass"); polyvinylformal; polytetrafluorethylene (basic data); polyamide resins (including a Soviet make: "Capron"); polysiloxen resin group, (developed by K. A. Andrianov and O. I. Gribanova).  
Bitumen: artificial (oil) and mineral (asphalt), "GOST" standard data given.

Drying oil: Linseed oil, tung oil, castor oil (basic data)



AID 757 - X

## Elektrotekhnicheskiye materialy

Pages

Wax: paraffin; ceresin ("GOST" standards); polychloronaphtalene (basic data); oleowax (developed by N. A. Petrov and S. A. Deryabin from castor oil).

Solvents: (a table listing formulae, standards and properties, pp. 88-89).

Varnish: impregnating varnish (types and specifications); enamel and adhesive varnish; oil varnish (types and specifications); cellulose varnish (types and data); aniline-formaldehyde and semi-conducting varnish.

Impregnating and filling compounds: quartz and other compounds for bushings and cables (tables, diagrams, "GOST" standards).

Drying and impregnating insulating materials: diagrams of drying equipment. Research on effects of moisture by Academician P. A. Rebinder, S.M. Lipatov; research on electric properties of various types of hygroscopic dielectrics by M. M. Mikhaylov; the book Teoriya sushki (Theory of Drying) by A. V. Lykov (1950) is mentioned.

Elektrotekhnicheskiye materialy

AID 757 - X  
Pages  
116-136

Ch. 5 Fiber Base Insulating Materials

Wood: properties and treatment, compounds with "uralite" (85% NaF and 15% dinitrophenol).

Paper and cardboard: data and "GOST" standards for paper insulations of cables and capacitors, developed by P. I. Gostev, T. P. Lazarenko, P. P. Bondarenko, M. A. Antonov, B. I. Ushakov and K. I. Dobrynin in 1951; Mica tape ("japanese paper") developed by I. V. Bondarenko and M. D. Dmitriyev; glue paper ("GOST" standards); cardboard ("GOST" standards).

Insulating fabrics "GOST" standards for rayon, cotton and hemp; tapes, rubberized and tarred. Non-varnish and varnish-treated insulating; basic data; "GOST" standards.

Inorganic fibrous materials: asbestos, composition, "GOST" standards, fiberglass, as developed by M. G. Chernyak, M. S. Aslanova, S. I. Ioffe "GOST" standards; table with basic data and properties on p. 135.

116-168

Ch. 6 Plastic Materials

General information, composition and photo of 150 ton hydraulic molding press. Methods of injecting, blowing,

## Elektrotekhnicheskiye materialy

and pressing with diagrams of equipment used.

Binders: bakelite type, "GOST" standards, types and basic data.

Organic glass: plexiglass, basic data, used for high frequency expulsion tube, diagram of RTO type.

Laminated plastic materials: "Getinax", new paper-base material developed by N. I. Krestov, V. S. Kvashnin, V. V. Kudryavtsev, V. B. Rekst, and O. A. Butuzova, basic data, types and "GOST" standards; cotton-base "textolite" types, data and "GOST" standards; "glass textolite", glass-base, data; plywood.

Plastic flexible films: vinyl and polysterene (styroflex), basic data.

Rubber materials: natural and synthetic rubber developed by I. L. Kondakov, S. V. Lebedev, N. D. Zelinskiy and B. V. Byzov, types, basic data, and "GOST" standards.

Thiuram vulcanized rubber; ebonite, "GOST" standards, table; asbocement, basic data; micalex, basic data.

### Ch. 7 Mineral Insulating Materials

Mica: Muscovite and phlogopite, properties, by M. M. Mikhaylov, E. K. Lashev, K. A. Vodop'yanov, M.I. Mantrov).

168-179

Elektrotekhnicheskiye materialy

AID 757 - X  
Pages

Micanites, shape, components and basic data, "GOST" standards.

Various mineral insulating materials: marble, "GOST" standards; slate, basic data; talcchlorite, basic data.

Ch. 8 Glass and Ceramics

Glass: components, properties, types, manufacturing, use, basic data, table on p. 188.

Porcelain: manufacturing, basic data, types, testing, "GOST" standards for pin type and suspension type insulators (diagrams presented); oil circuit-breakers: VM-35-N type; 110 kv transformer TFN type (diagrams presented)

Various ceramics: Radio- and ultra-porcelain developed by N. P. Bogoroditskiy and I. D. Fridberg, basic data listed. Aluminoxide basic data; steatite, ceramics based on  $TiO_2$  "Rutil" (ticond T80, T60 and T150); segnetoceramics (tibar), developed by B. M. Vul; vilyte developed by V. I. Pruzhinina-Granovskaya and L. I. Ivanov used for grounding.

179-214